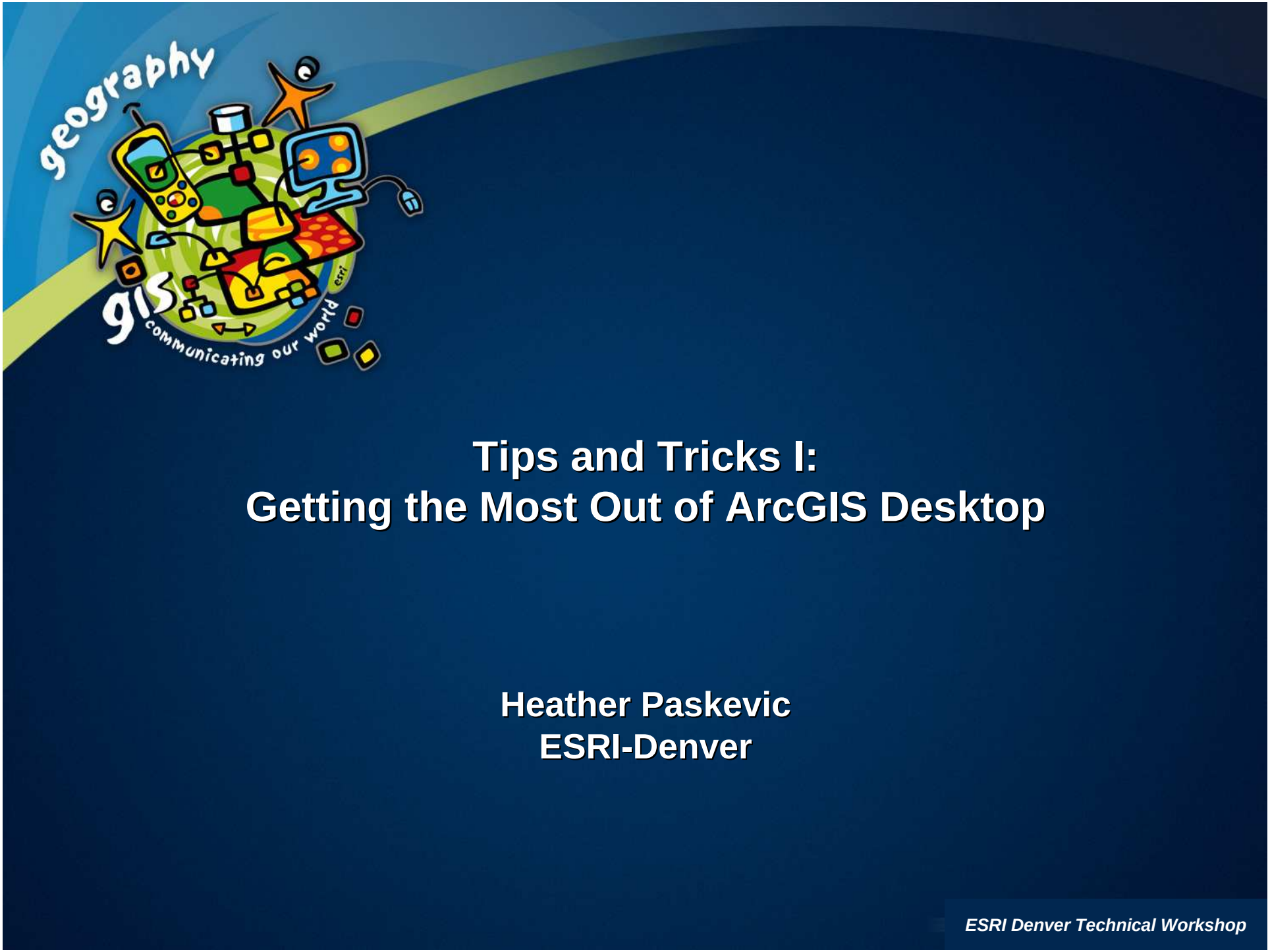


Tips and Tricks I:
Getting the Most Out of ArcGIS Desktop

Heather Paskevic
ESRI-Denver

Agenda

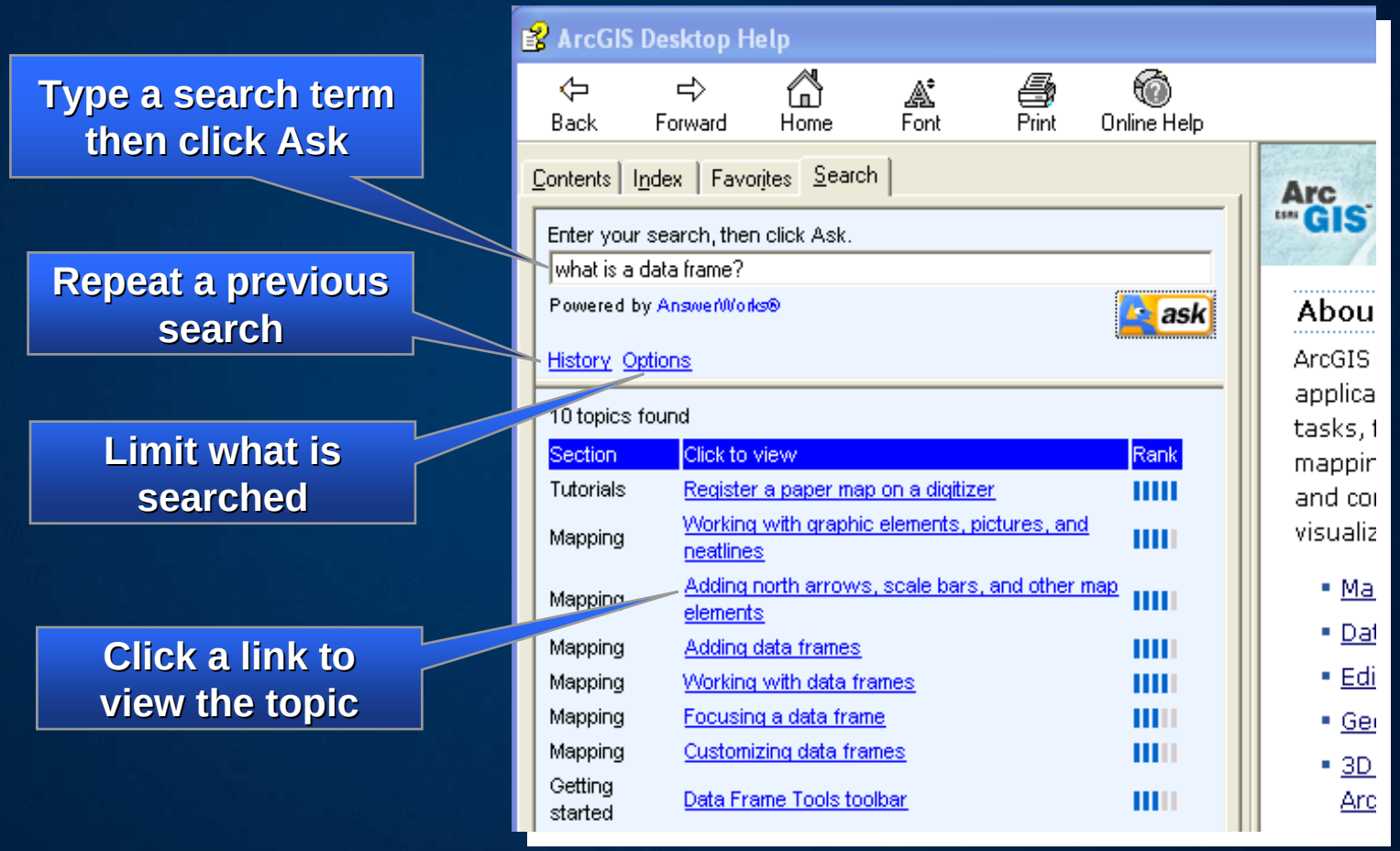
- General Topics
- Data Management with ArcGIS
- ArcMap & Cartography Tips and Tricks
- Editing Tips and Tricks *(if time allows)*

General Topics

- ArcGIS Desktop Help
- ESRI Knowledge Base
- ArcCatalog Tips and Tricks
- ArcMap Tips and Tricks

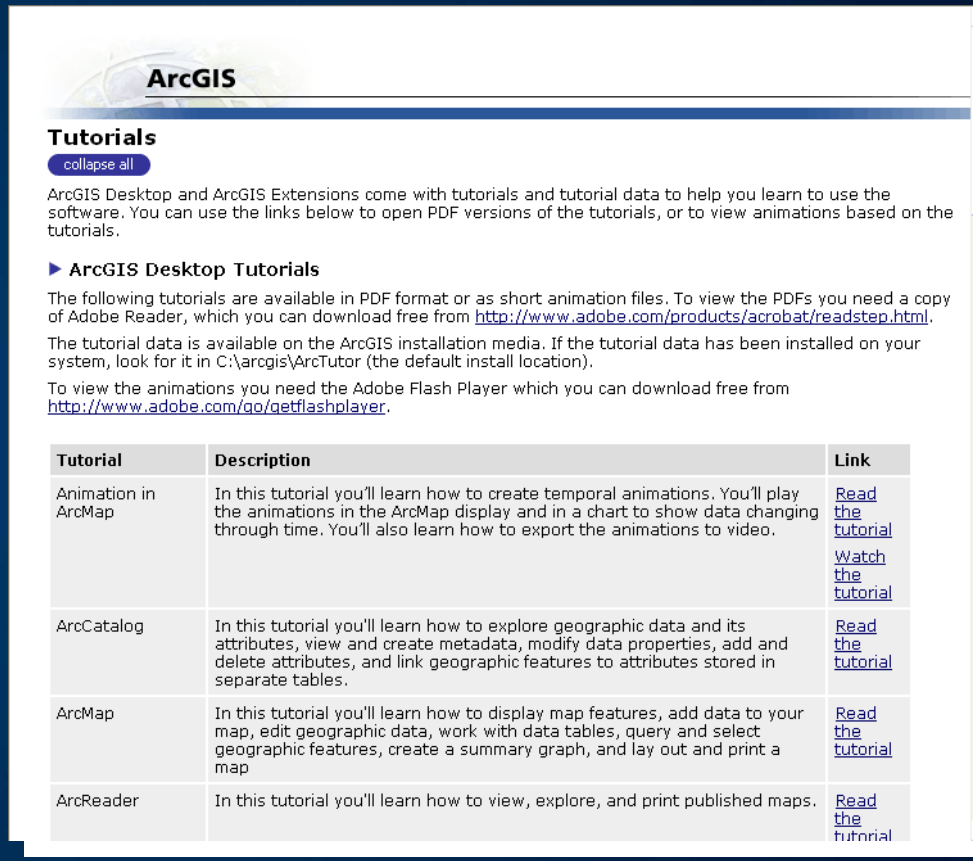
ArcGIS 9.2 Help

- Better indexing and search capabilities



Tutorials

- PDFs and animations are automatically installed with ArcGIS Desktop
- Data installed separately
- Open from the Desktop Help



ArcGIS

Tutorials

collapse all

ArcGIS Desktop and ArcGIS Extensions come with tutorials and tutorial data to help you learn to use the software. You can use the links below to open PDF versions of the tutorials, or to view animations based on the tutorials.

▶ **ArcGIS Desktop Tutorials**

The following tutorials are available in PDF format or as short animation files. To view the PDFs you need a copy of Adobe Reader, which you can download free from http://www.adobe.com/products/acrobat/readstep.html.

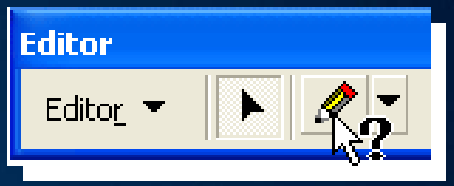
The tutorial data is available on the ArcGIS installation media. If the tutorial data has been installed on your system, look for it in C:\arcgis\ArcTutor (the default install location).

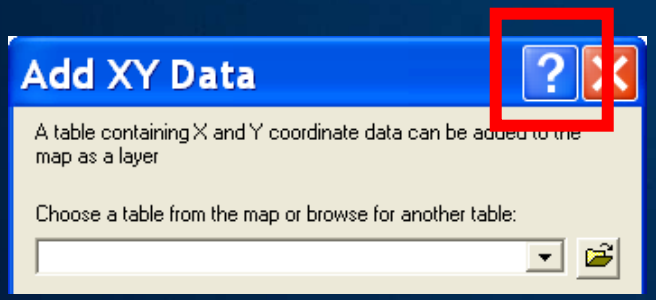
To view the animations you need the Adobe Flash Player which you can download free from http://www.adobe.com/go/getflashplayer.

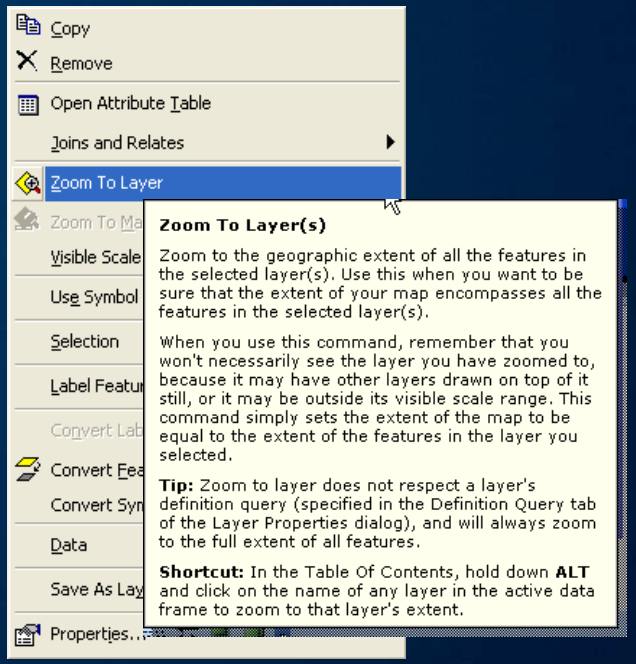
Tutorial	Description	Link
Animation in ArcMap	In this tutorial you'll learn how to create temporal animations. You'll play the animations in the ArcMap display and in a chart to show data changing through time. You'll also learn how to export the animations to video.	Read the tutorial Watch the tutorial
ArcCatalog	In this tutorial you'll learn how to explore geographic data and its attributes, view and create metadata, modify data properties, add and delete attributes, and link geographic features to attributes stored in separate tables.	Read the tutorial
ArcMap	In this tutorial you'll learn how to display map features, add data to your map, edit geographic data, work with data tables, query and select geographic features, create a summary graph, and lay out and print a map	Read the tutorial
ArcReader	In this tutorial you'll learn how to view, explore, and print published maps.	Read the tutorial

Quick Help

- Quick ways to get Help
  - F1 Key opens Help
  - What's This? tool
  - Shift - F1 for Context Menus
  - Help button on dialogs

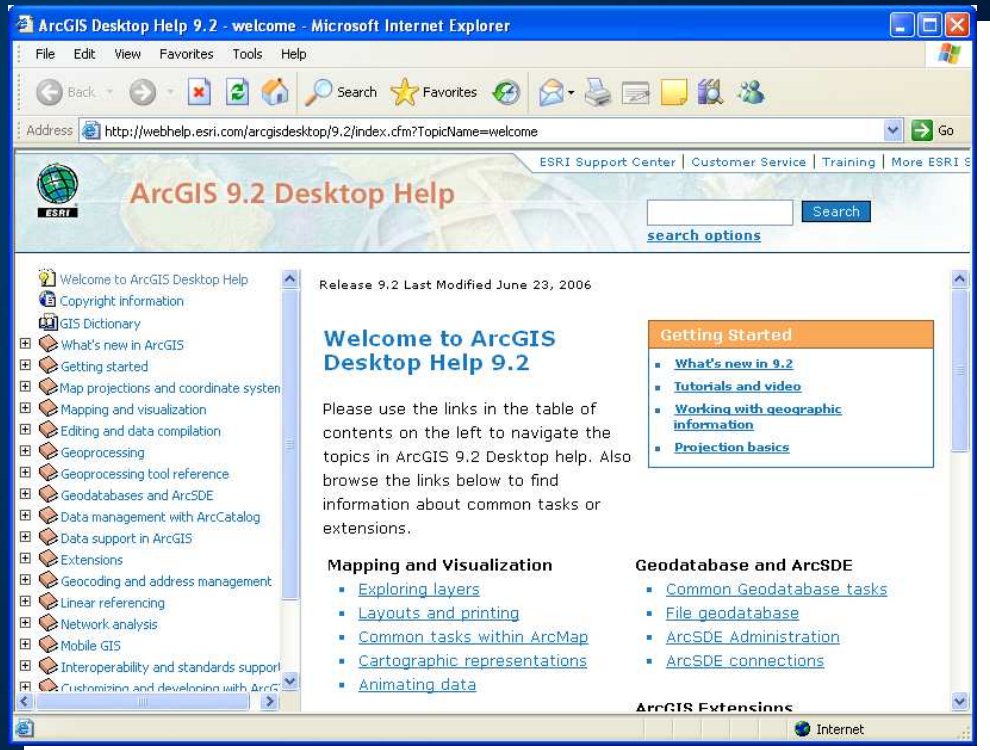


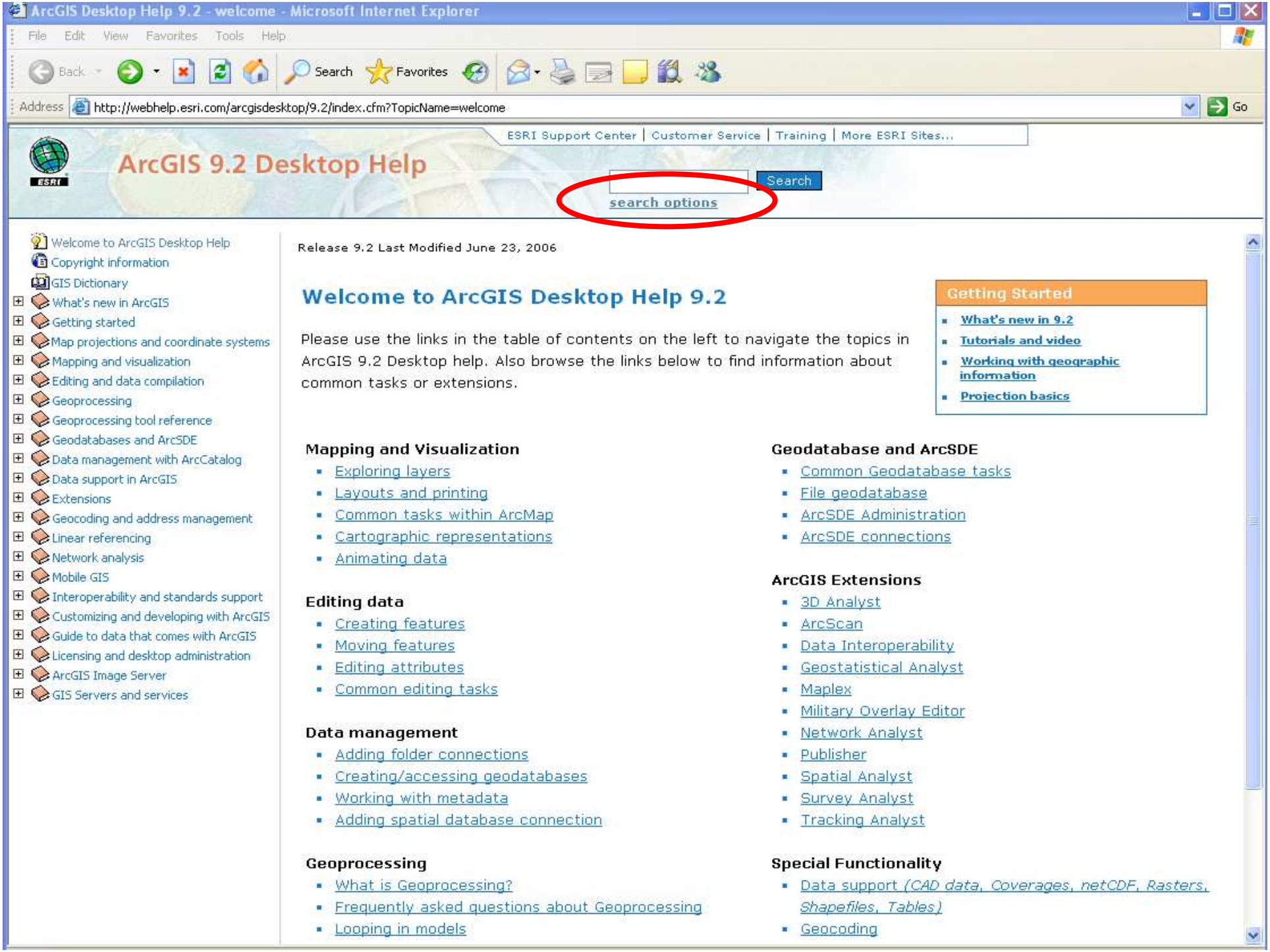


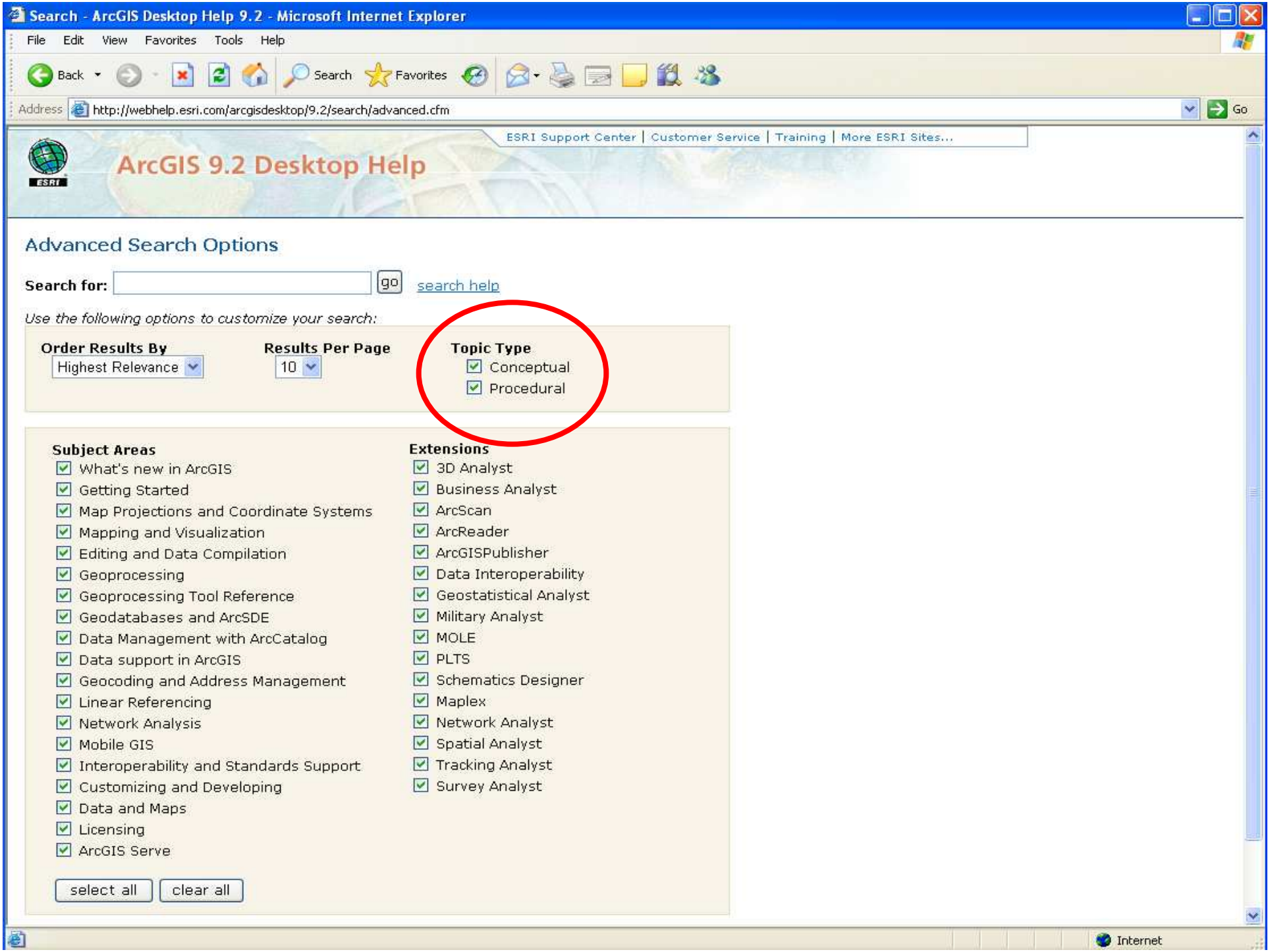


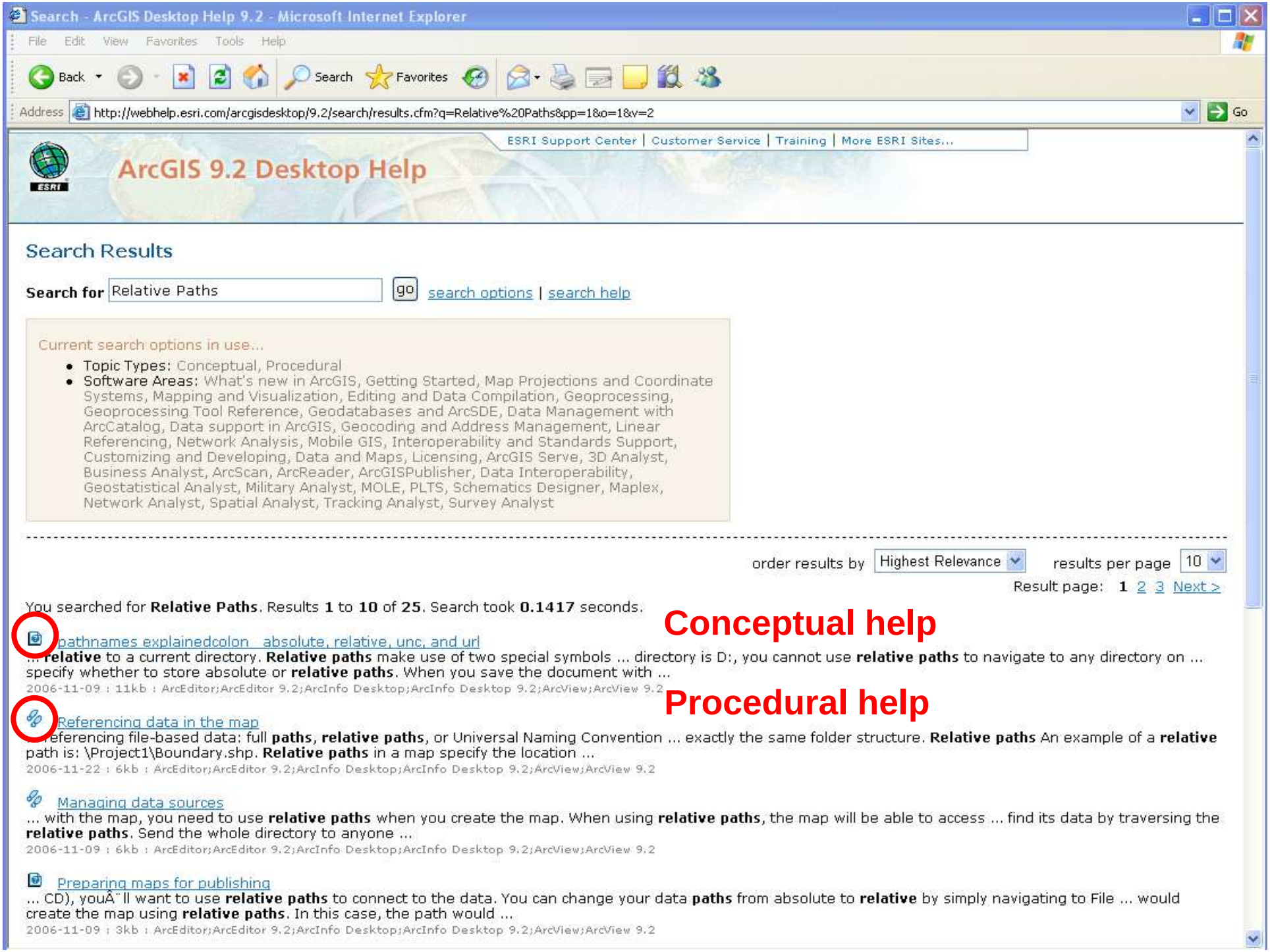
ArcGIS Desktop Help on the Web

- Access from any ArcGIS Desktop application
- Updated with current information




ArcGIS Desktop Help 9.2 - welcome - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://webhelp.esri.com/arcgisdesktop/9.2/index.cfm?TopicName=welcome
Go
ESRI Support Center | Customer Service | Training | More ESRI Sites...
ArcGIS 9.2 Desktop Help
Search
search options
Welcome to ArcGIS Desktop Help
Copyright information
GIS Dictionary
What's new in ArcGIS
Getting started
Map projections and coordinate systems
Mapping and visualization
Editing and data compilation
Geoprocessing
Geoprocessing tool reference
Geodatabases and ArcSDE
Data management with ArcCatalog
Data support in ArcGIS
Extensions
Geocoding and address management
Linear referencing
Network analysis
Mobile GIS
Interoperability and standards support
Customizing and developing with ArcGIS
Guide to data that comes with ArcGIS
Licensing and desktop administration
ArcGIS Image Server
GIS Servers and services
Release 9.2 Last Modified June 23, 2006
Welcome to ArcGIS Desktop Help 9.2
Please use the links in the table of contents on the left to navigate the topics in ArcGIS 9.2 Desktop help. Also browse the links below to find information about common tasks or extensions.
Getting Started
What's new in 9.2
Tutorials and video
Working with geographic information
Projection basics
Mapping and Visualization
Exploring layers
Layouts and printing
Common tasks within ArcMap
Cartographic representations
Animating data
Editing data
Creating features
Moving features
Editing attributes
Common editing tasks
Data management
Adding folder connections
Creating/accessing geodatabases
Working with metadata
Adding spatial database connection
Geoprocessing
What is Geoprocessing?
Frequently asked questions about Geoprocessing
Looping in models
Geodatabase and ArcSDE
Common Geodatabase tasks
File geodatabase
ArcSDE Administration
ArcSDE connections
ArcGIS Extensions
3D Analyst
ArcScan
Data Interoperability
Geostatistical Analyst
Maplex
Military Overlay Editor
Network Analyst
Publisher
Spatial Analyst
Survey Analyst
Tracking Analyst
Special Functionality
Data support (CAD data, Coverages, netCDF, Rasters, Shapefiles, Tables)
Geocoding


Search - ArcGIS Desktop Help 9.2 - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://webhelp.esri.com/arcgisdesktop/9.2/search/advanced.cfm
Go
ESRI Support Center | Customer Service | Training | More ESRI Sites...
ESRI
ArcGIS 9.2 Desktop Help
Advanced Search Options
Search for:
go
search help
Use the following options to customize your search:
Order Results By
Highest Relevance
Results Per Page
10
Topic Type
Conceptual
Procedural
Subject Areas
What's new in ArcGIS
Getting Started
Map Projections and Coordinate Systems
Mapping and Visualization
Editing and Data Compilation
Geoprocessing
Geoprocessing Tool Reference
Geodatabases and ArcSDE
Data Management with ArcCatalog
Data support in ArcGIS
Geocoding and Address Management
Linear Referencing
Network Analysis
Mobile GIS
Interoperability and Standards Support
Customizing and Developing
Data and Maps
Licensing
ArcGIS Serve
Extensions
3D Analyst
Business Analyst
ArcScan
ArcReader
ArcGISPublisher
Data Interoperability
Geostatistical Analyst
Military Analyst
MOLE
PLTS
Schematics Designer
Maplex
Network Analyst
Spatial Analyst
Tracking Analyst
Survey Analyst
select all
clear all
Internet


Search - ArcGIS Desktop Help 9.2 - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://webhelp.esri.com/arcgisdesktop/9.2/search/results.cfm?q=Relative%20Paths&pp=1&o=1&v=2
Go
ESRI Support Center | Customer Service | Training | More ESRI Sites...
ArcGIS 9.2 Desktop Help
Search Results
Search for Relative Paths
go
search options | search help
Current search options in use...
Topic Types: Conceptual, Procedural
Software Areas: What's new in ArcGIS, Getting Started, Map Projections and Coordinate Systems, Mapping and Visualization, Editing and Data Compilation, Geoprocessing, Geoprocessing Tool Reference, Geodatabases and ArcSDE, Data Management with ArcCatalog, Data support in ArcGIS, Geocoding and Address Management, Linear Referencing, Network Analysis, Mobile GIS, Interoperability and Standards Support, Customizing and Developing, Data and Maps, Licensing, ArcGIS Serve, 3D Analyst, Business Analyst, ArcScan, ArcReader, ArcGISPublisher, Data Interoperability, Geostatistical Analyst, Military Analyst, MOLE, PLTS, Schematics Designer, Maplex, Network Analyst, Spatial Analyst, Tracking Analyst, Survey Analyst
order results by Highest Relevance
results per page 10
Result page: 1 2 3 Next >
You searched for Relative Paths. Results 1 to 10 of 25. Search took 0.1417 seconds.
Conceptual help
pathnames explainedcolon absolute, relative, unc, and url
... relative to a current directory. Relative paths make use of two special symbols ... directory is D:, you cannot use relative paths to navigate to any directory on ... specify whether to store absolute or relative paths. When you save the document with ...
2006-11-09 : 11kb : ArcEditor;ArcEditor 9.2;ArcInfo Desktop;ArcInfo Desktop 9.2;ArcView;ArcView 9.2
Procedural help
Referencing data in the map
... referencing file-based data: full paths, relative paths, or Universal Naming Convention ... exactly the same folder structure. Relative paths An example of a relative path is: \Project1\Boundary.shp. Relative paths in a map specify the location ...
2006-11-22 : 6kb : ArcEditor;ArcEditor 9.2;ArcInfo Desktop;ArcInfo Desktop 9.2;ArcView;ArcView 9.2
Managing data sources
... with the map, you need to use relative paths when you create the map. When using relative paths, the map will be able to access ... find its data by traversing the relative paths. Send the whole directory to anyone ...
2006-11-09 : 6kb : ArcEditor;ArcEditor 9.2;ArcInfo Desktop;ArcInfo Desktop 9.2;ArcView;ArcView 9.2
Preparing maps for publishing
... CD), youÂ¨ll want to use relative paths to connect to the data. You can change your data paths from absolute to relative by simply navigating to File ... would create the map using relative paths. In this case, the path would ...
2006-11-09 : 3kb : ArcEditor;ArcEditor 9.2;ArcInfo Desktop;ArcInfo Desktop 9.2;ArcView;ArcView 9.2

ESRI Knowledge Base (KB)

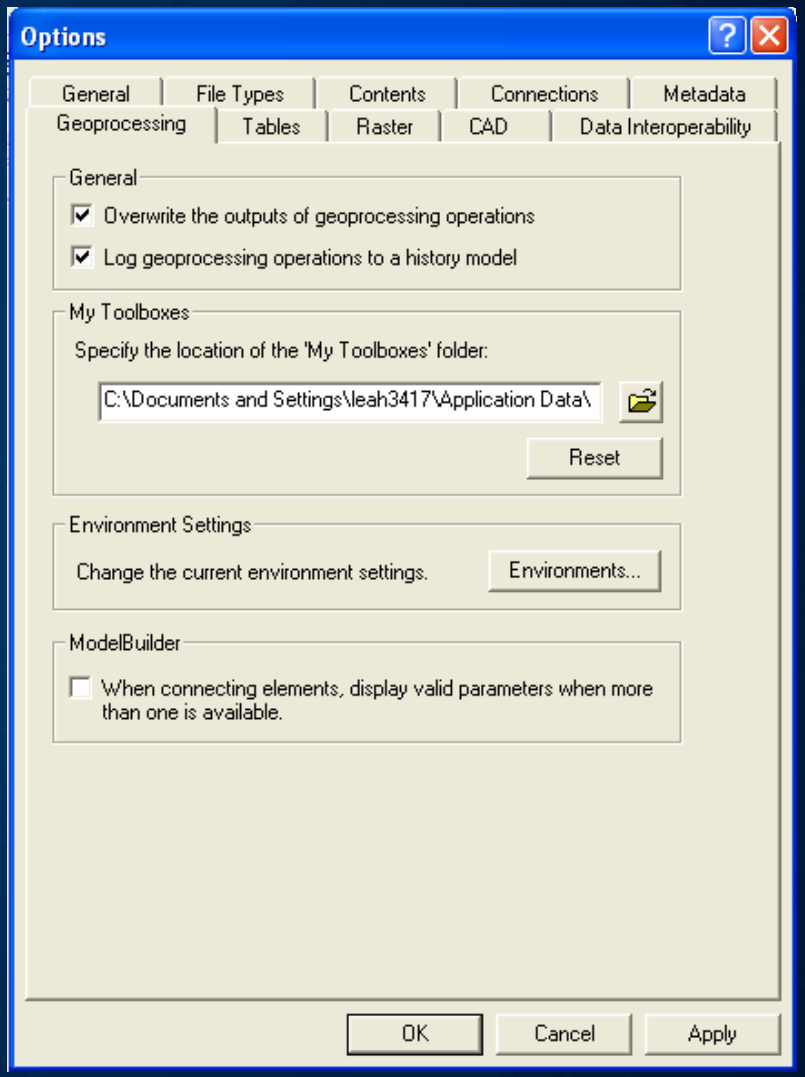
- Searchable
  - Known bugs, “how to” documents, common error messages
- Technical articles
- Product documentation
- White papers
- Access more with Global Account
  - Manage bookmarks
  - Forums

http://support.esri.com > Knowledge Base tab

ArcCatalog and ArcMap Tips and Tricks

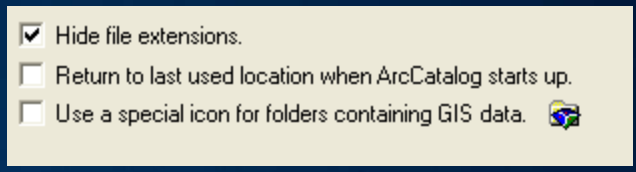
ArcCatalog: Options

- Tools > Options
  - Improve performance when browsing for data
  - Display more information in the Contents tab
  - Change geoprocessing options



ArcCatalog Tips and Tricks

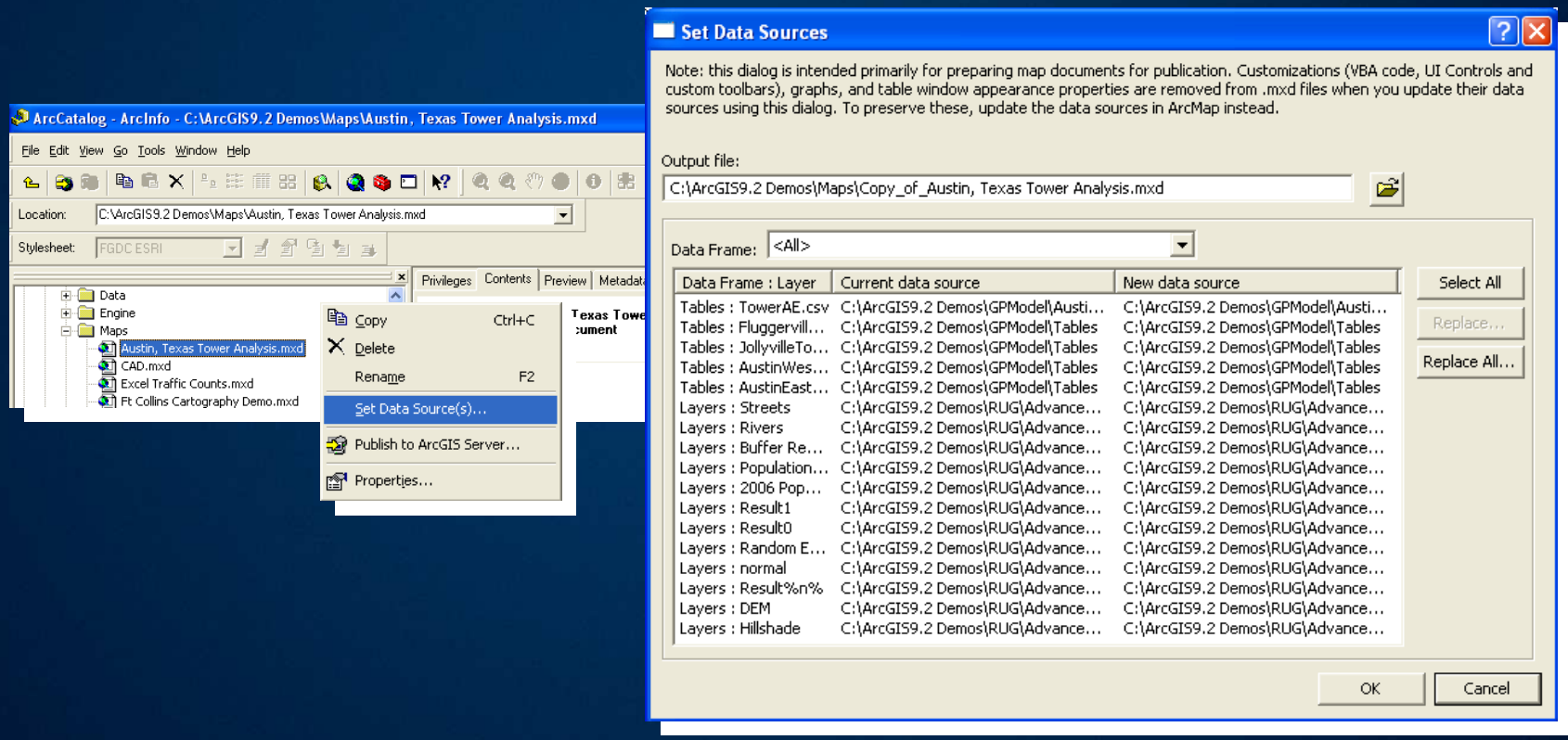
- Performance
  - Limit folder connections
  - Turn off unnecessary data types
  - Avoid using “Return to last used location…”
  - Avoid option to show folders with special GIS data icon
- Hidden tricks
  - Rename folder connections
  - Drop folder onto the ‘Catalog’ root to create new connections
  - Sort Contents tab by feature type of the data
  - Create group layer in ArcCatalog



(Tools>Options)

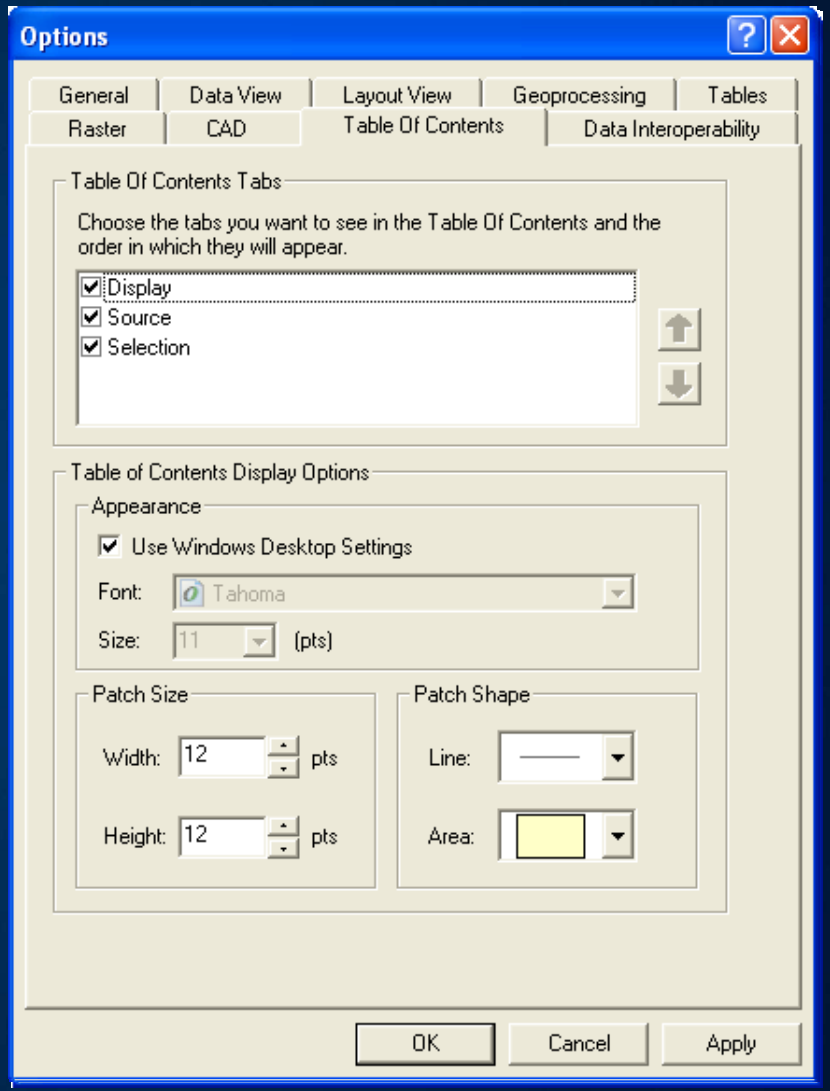
ArcCatalog: Set Data Sources

- Right-click on MXD > Set Data Source(s)…
  - Works with ArcSDE, File geodatabases and coverages



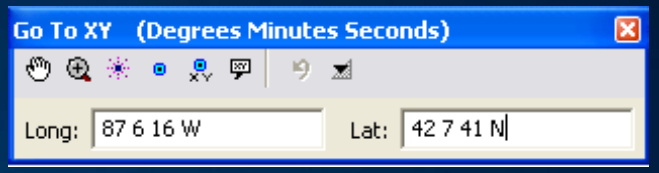
ArcMap: Options

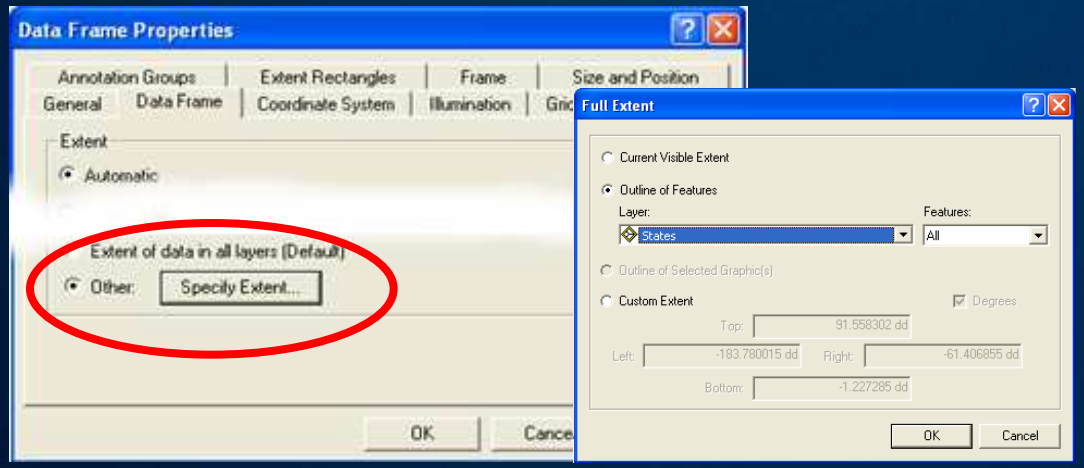
- Tools > Options
  - Display settings
  - Control layout appearance
  - Modify table properties
  - Customize Table of Content symbols
  - Zoom/Pan tool options

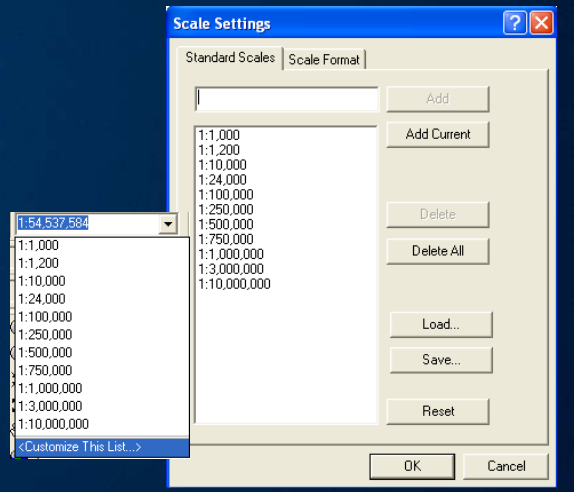


ArcMap Tips and Tricks

- Productivity
  - Navigation tools:
    - Go To XY command
    - Use mouse wheel to zoom, pan, center (data vs layout view)
    - Keyboard shortcuts to change tools (e.g. Z = Zoom In)
    - Customizable Full Extent
    - Add your own scale values to the Scale control

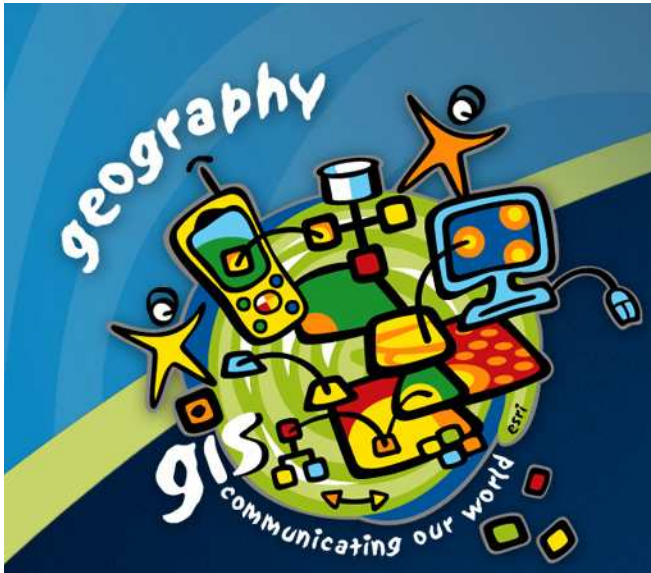




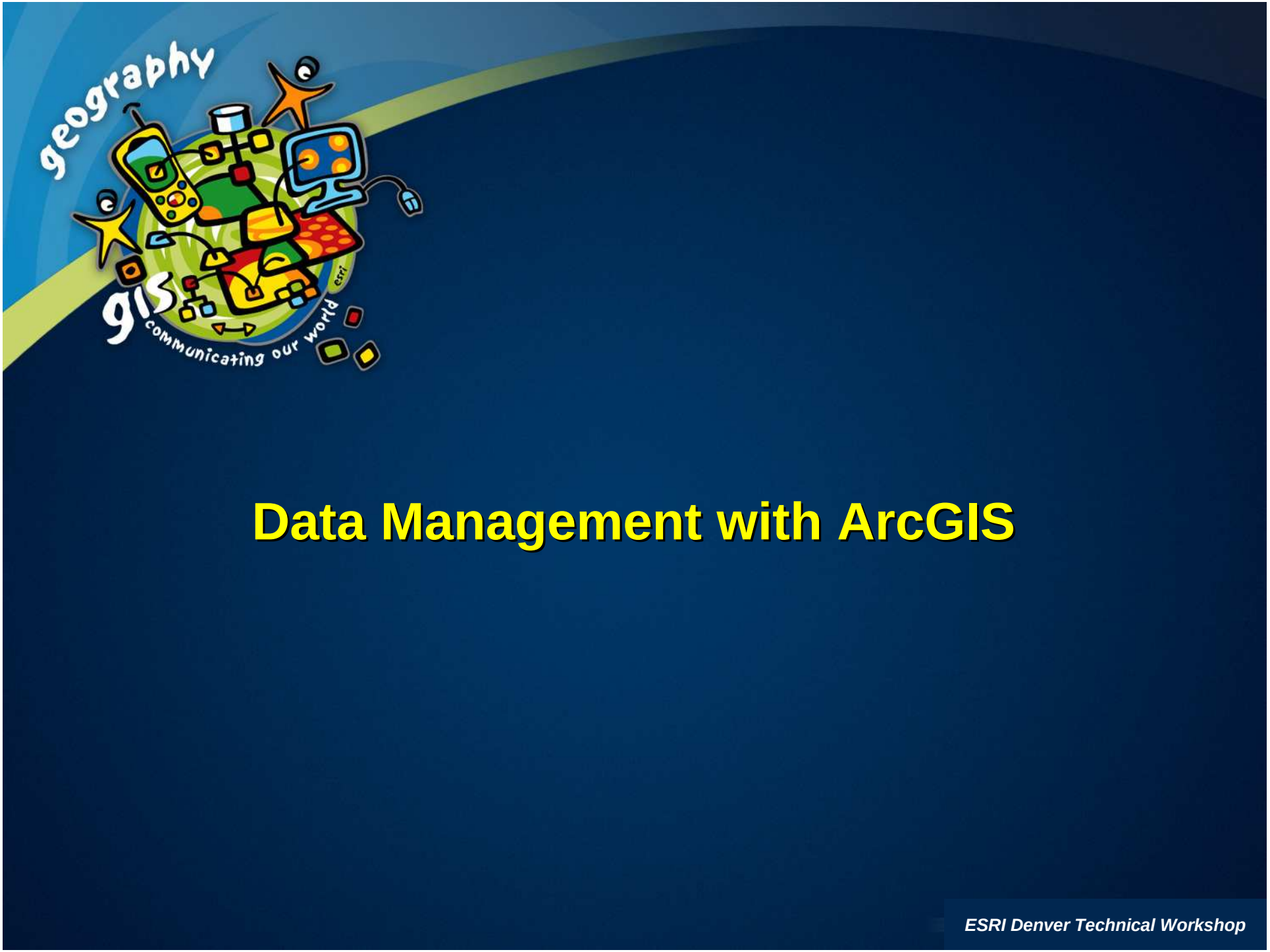


ArcMap Advanced Settings

- Located in %ArcGIS Install%\Utilities folder
- Safe access to ArcMap settings not available in the interface
- A detailed document describes each registry key
- Some items need administrative privileges



Questions and Demo



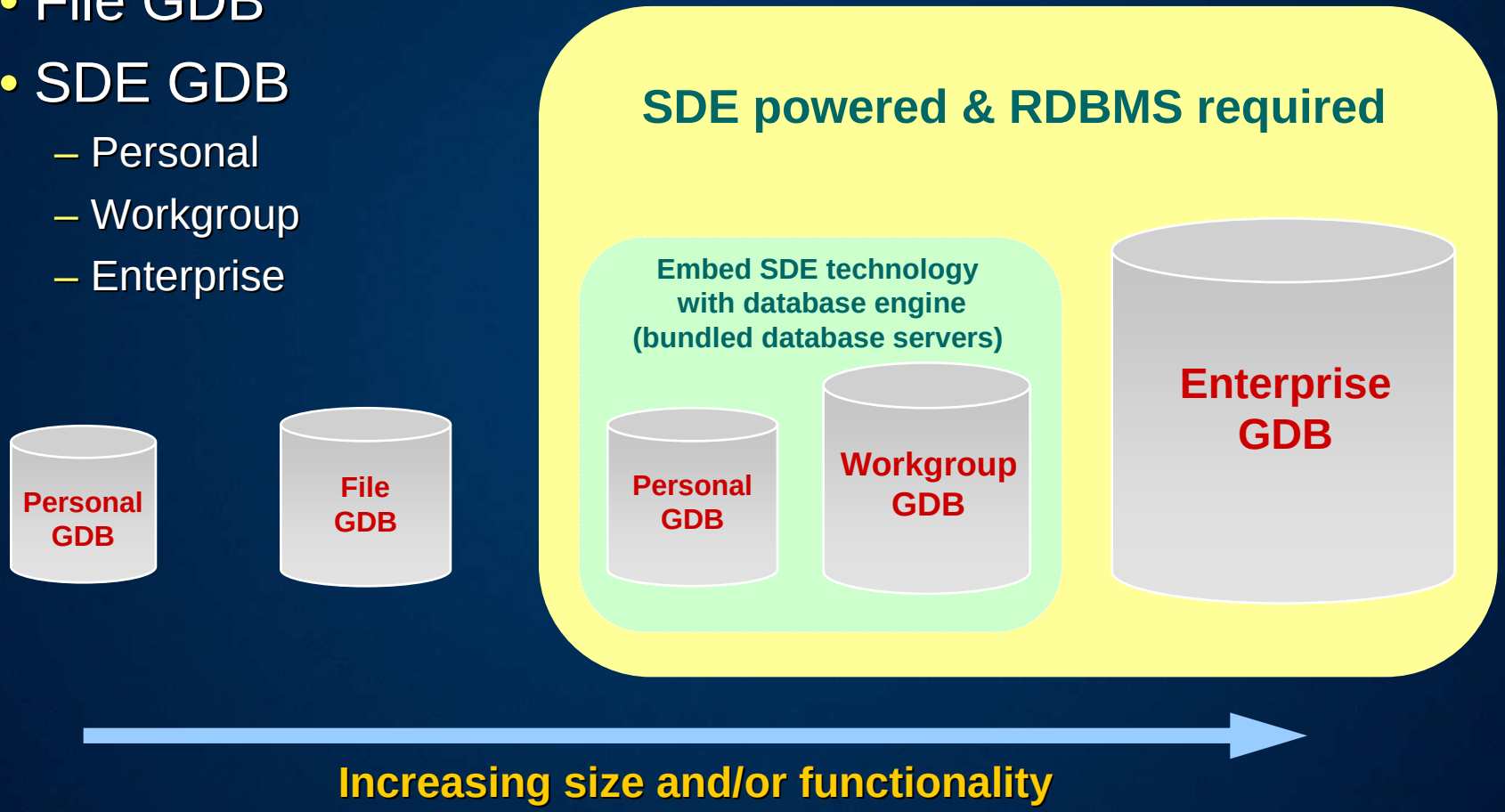
Data Management with ArcGIS

Section Outline

- Geodatabase storage options at ArcGIS 9.2
- Working with geodatabases and feature classes
  - Geodatabase upgrades at ArcGIS 9.2
  - Migrating data between geodatabases and/or other formats
  - Geodata creation
- Tabular data management
  - Working with Tables
  - Working with XY data and creating event layers
  - Working with Excel data in 9.2

Geodatabase storage options at ArcGIS 9.2

- Personal GDB (MS Access-based)
- File GDB
- SDE GDB
  - Personal
  - Workgroup
  - Enterprise



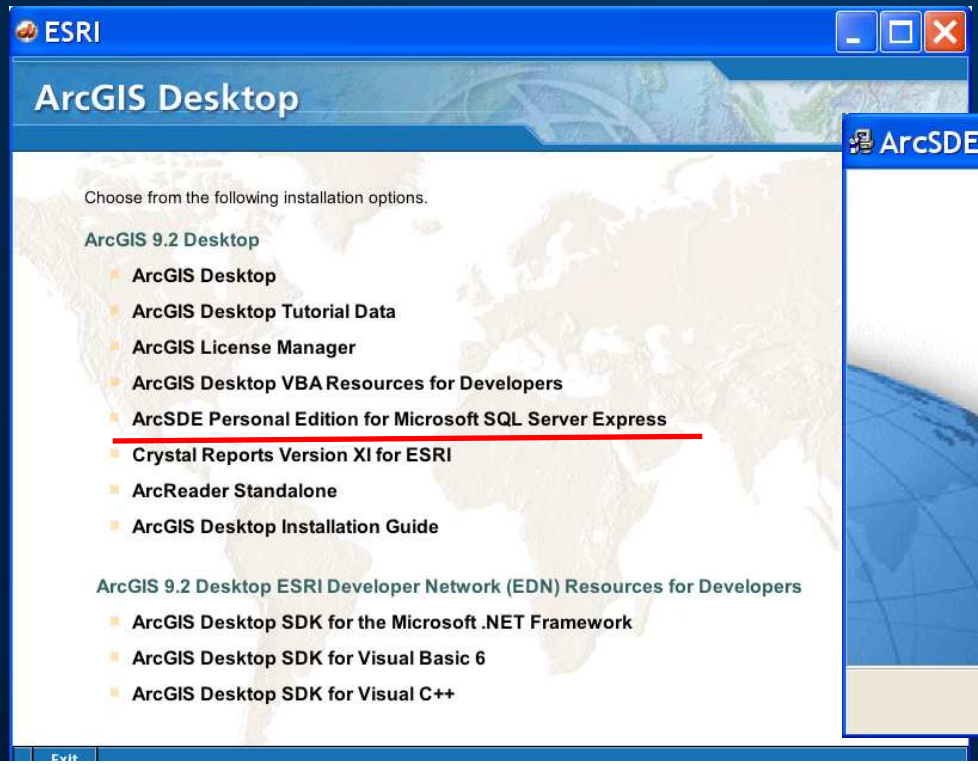
Geodatabase options at ArcGIS 9.2

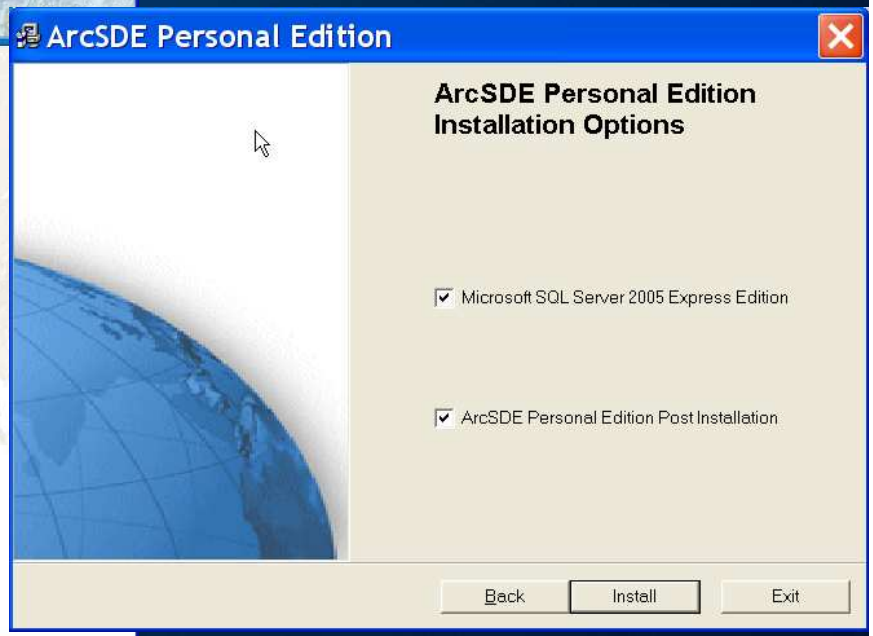
Personal GDB	**Stored in Access, 2 GB limit (effective size is 250 to 500 MB), Windows only, single editor and a few readers, legacy support, versioning not supported**
File-based GDB	**Stored in file folder, up to 1 TB per table, any platform, single editor and a few readers, versioning not supported**
ArcSDE Personal	**Stored in SQL Server Express 2005 (bundled with software), 1 editor, 2 readers. Included with ArcEditor and ArcInfo, 4 GB database size limit**
ArcSDE Workgroup	**Stored in SQL Server Express 2005 (bundled with software) 10 users concurrent and editors, internet / intranet, 4 GB database size limit**
ArcSDE Enterprise	**Stored in RDBMS (Oracle, SQL Server, DB2, Informix) versioning and multi-user support, unlimited readers and editors, unlimited database size, internet / intranet**

Do you have ArcSDE Personal?

(ArcEditor/ArcInfo)

- Installation in two steps
  - SQL Server 2005 Express edition
  - ArcSDE Personal post installation
  - ArcSDE Workgroup has its own installation media – setup and post installation is identical

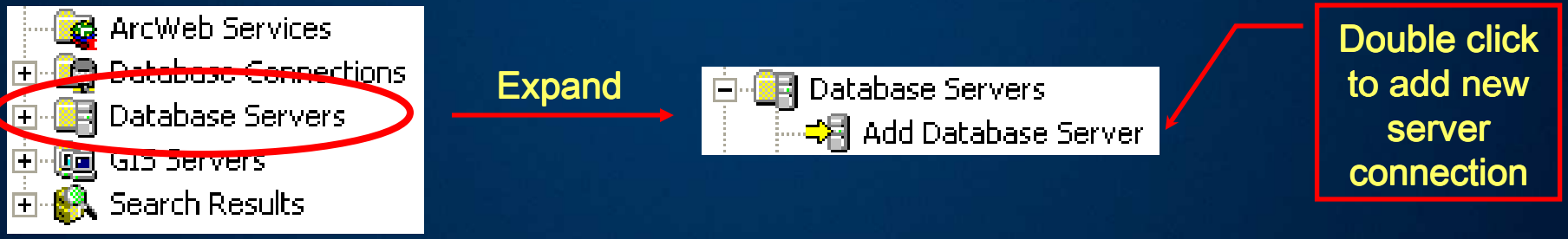




Adding a new database server

(pssst….it's easier than you think)

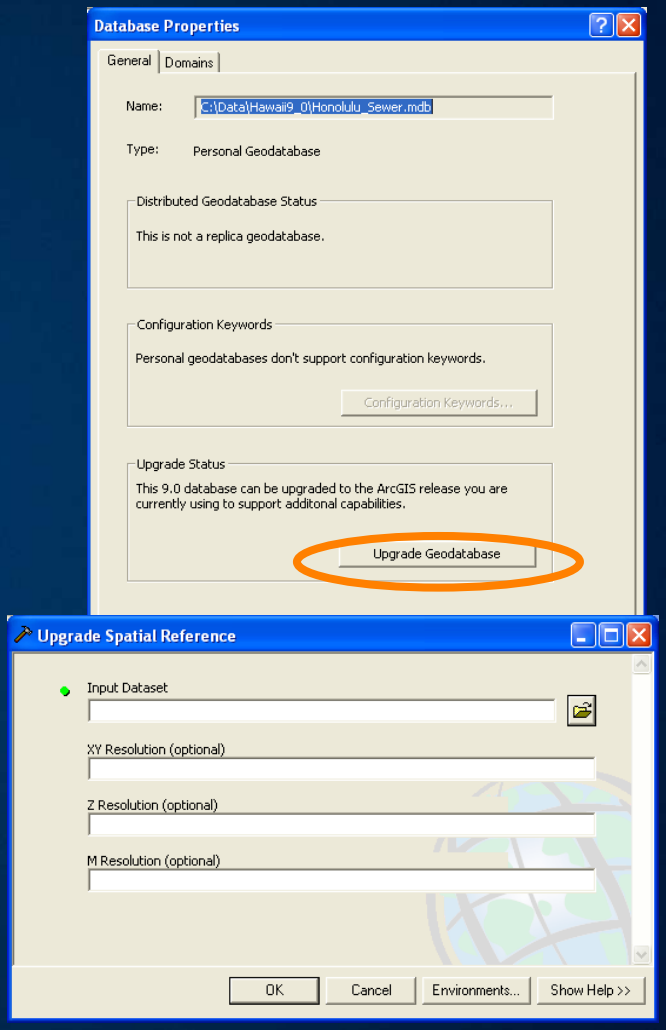
- An instance of SQL Server 2005 Express is referred to as a database server
  - Generic due to potential support for other platforms
- New top-level folder in ArcCatalog tree



- This connection is to the SQL Server Express instance

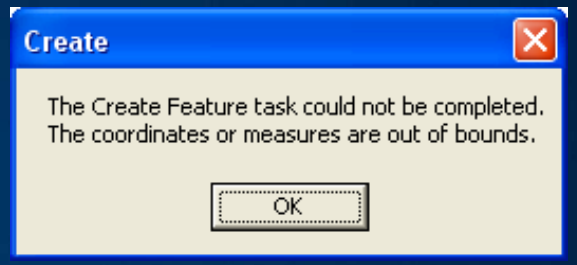
Upgrade Geodatabase

- Optional, but required to take advantage of new version functionality
  - History, replication
- Older client versions cannot work with upgraded versions (save a copy)
- High precision support at 9.2:
  - New data created will be in high precision
  - Existing data unaffected
  - Upgrade Spatial Reference tool



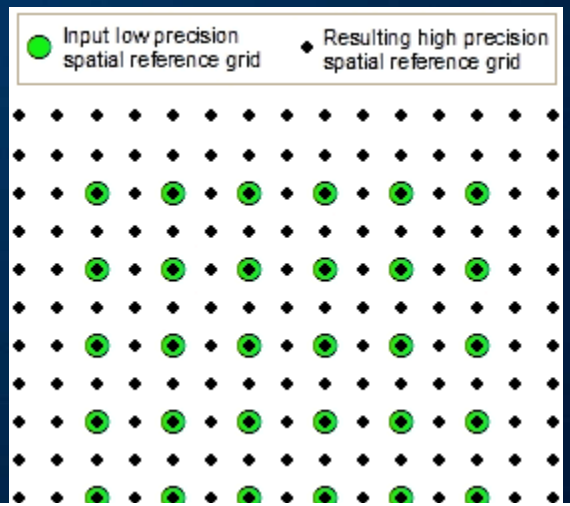
Should I upgrade my dataset's spatial reference?

- Yes – unless…
  - You have datasets that will need to be delivered and used by 9.1 clients
  - You enjoy seeing this message



- Key Reasons
  - Some geodatabase functionality is only available with high precision spatial references (e.g., Replication)

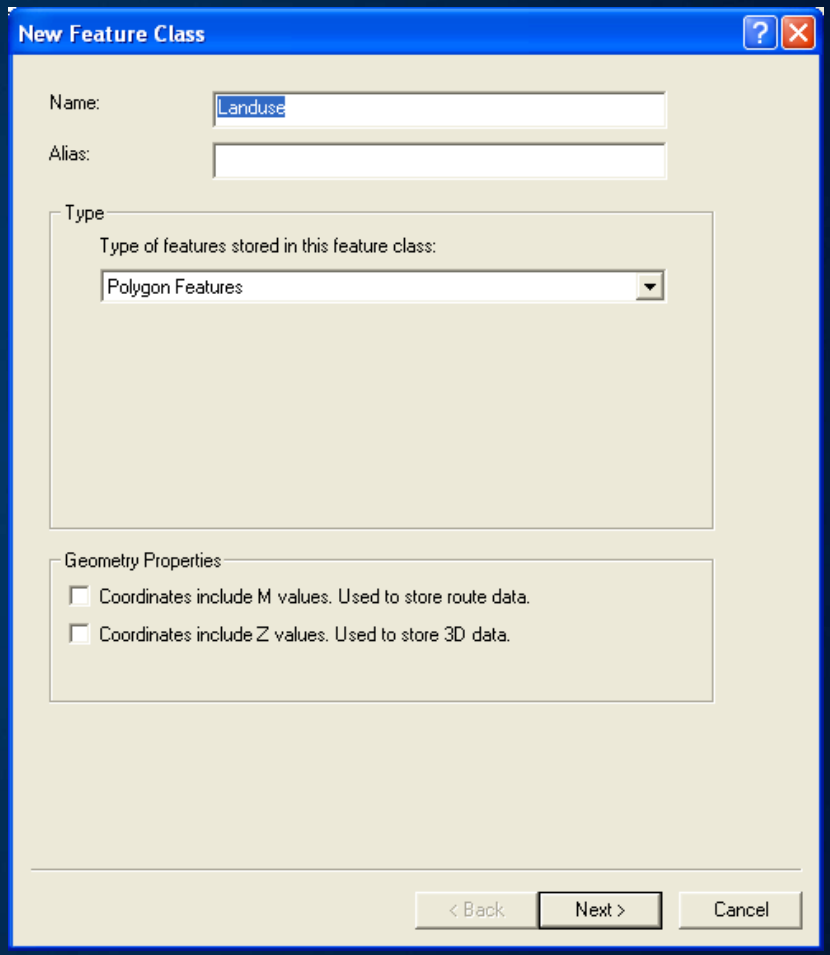
High precision storage allows you to store coordinates closer together while expanding the x-, y-, z-, m-domains of the dataset



Geodata creation

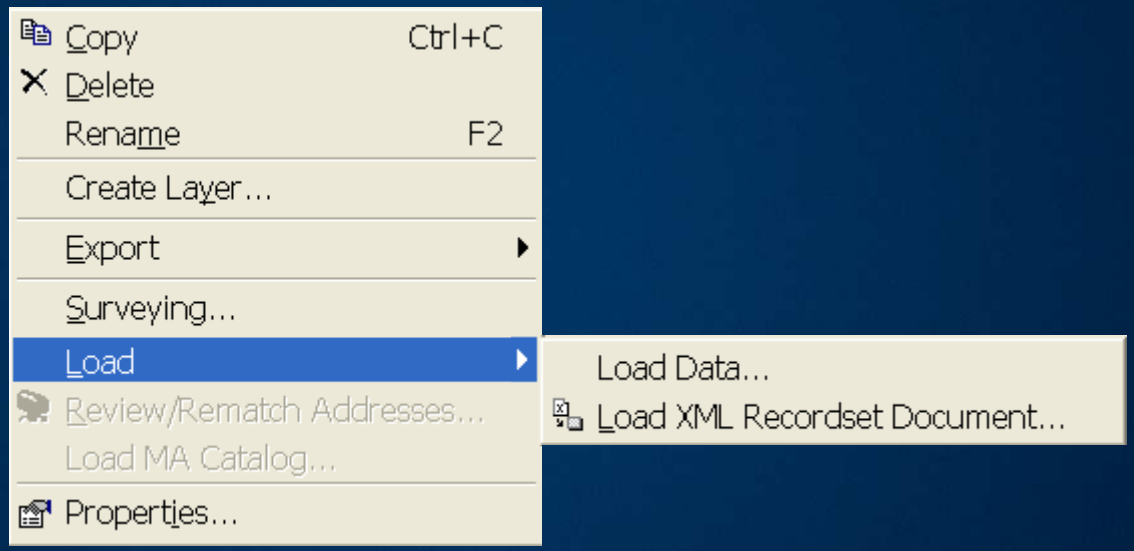
Create a New Feature Class

- ArcCatalog or ArcToolbox
  - Data management toolbox > Features toolset > Create feature class tool
- *Improved wizard at 9.2*



ArcCatalog Simple Data Loader

- Load data into an existing “simple” feature class (FC) or Table
- Right-click data element in ArcCatalog



Import Geodatabase from XML

- Import XML workspace document
  - ArcCatalog: GDB context menu >Import > XML Workspace Document
- Individual records
  - ArcCatalog: FC or table context menu > Load > XML Record Set

ArcEditor or ArcInfo

Export Geodatabase to XML

- Flexible way to transport data
- Export all or any part of a GDB to a file
  - Entire GDB schema with data
  - Individual feature class or table
  - Individual records
- To XML, Zip, or Z file (use when data is larger then 4GB)
  - Can import directly from these file types

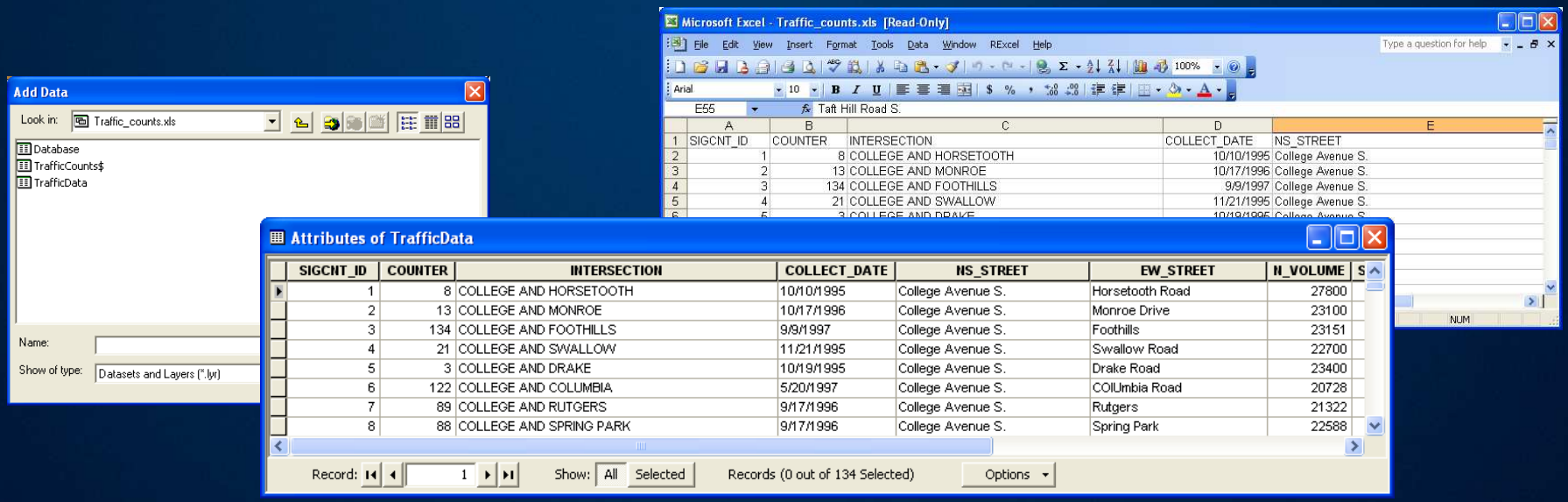
ArcEditor or ArcInfo

Tables & Field Names: Best Practices

- Rules depend upon underlying data type
  - Reserved words
- No spaces, hyphens, [ ],{ }, stay away from non-alphanumeric to be safe
- Don’t begin with a number
- Length restrictions:
  - Geodatabase: 31
  - dBase: 10
  - Coverages: 16

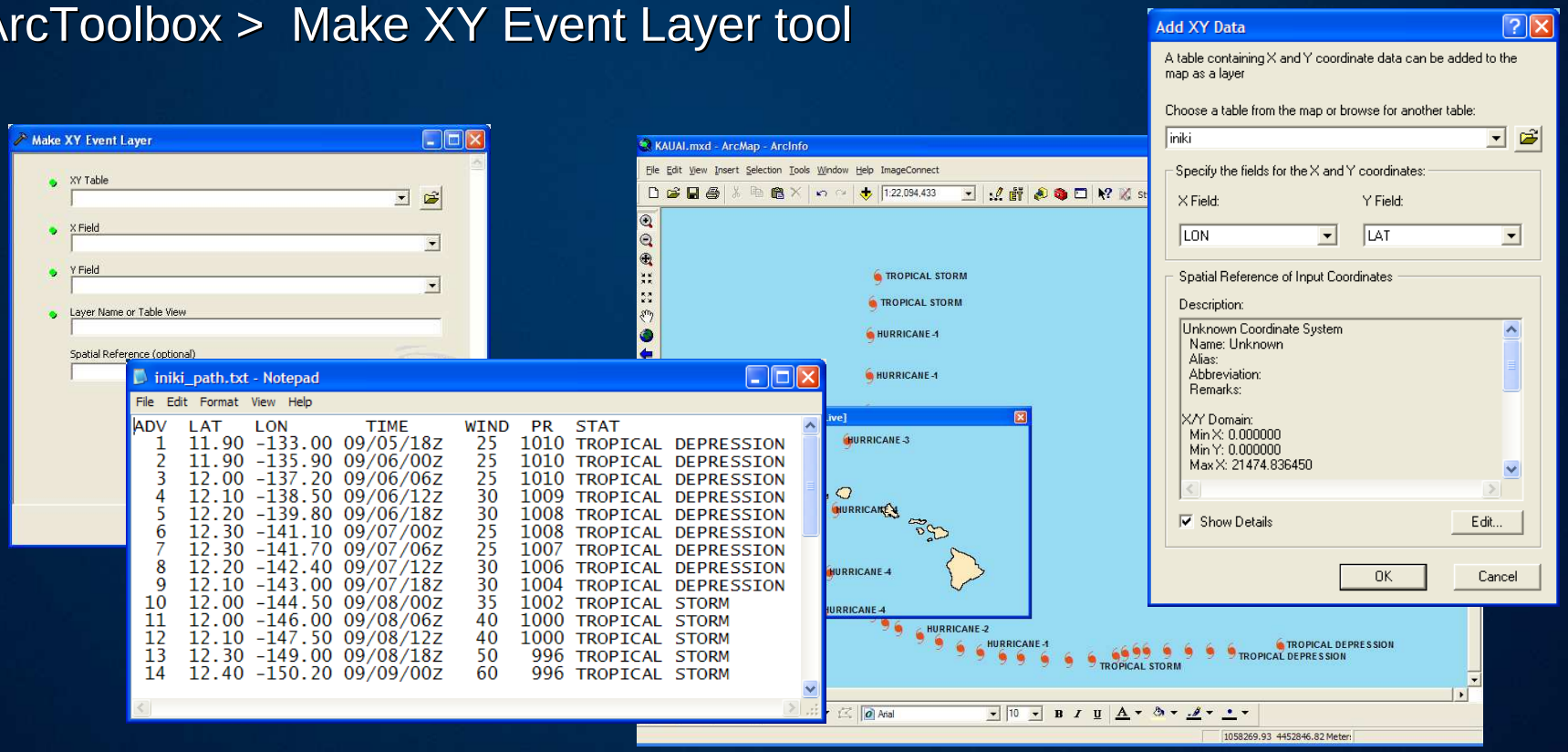
Working with Excel Files

- You can open Microsoft Excel tables directly in ArcGIS and work with them like other tabular data sources
- Read-only
- Non-Object ID tables



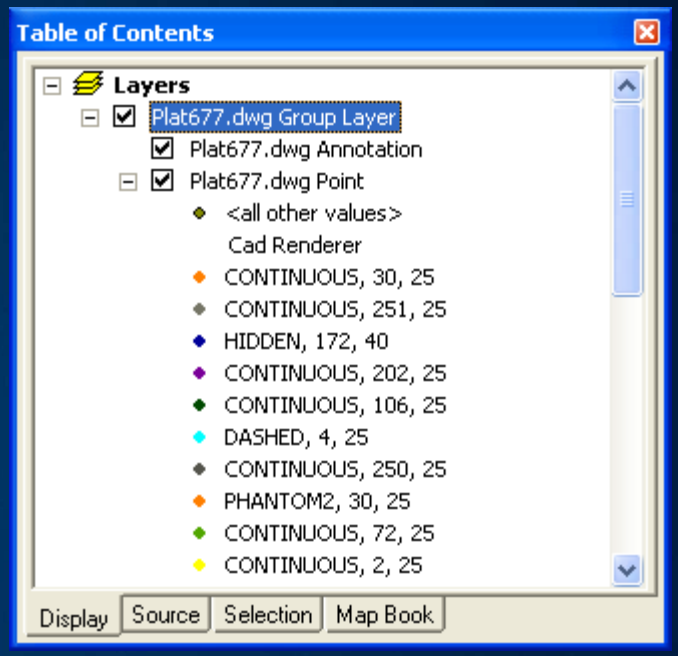
Add XY Data (Event Layers)

- Uses a table as a source to add geographic locations
- Specify coordinate system
- X,Y fields must be numeric
- ArcToolbox > Make XY Event Layer tool



CAD Data

- Display, query, and analyze CAD data directly in ArcGIS
  - Support many of the same layer properties as GIS layers: transparency, definition queries, selections, etc.
  - No need to convert to GIS format to use Geoprocessing tools
- Import/Export data migration workflows
  - Simple to Detailed

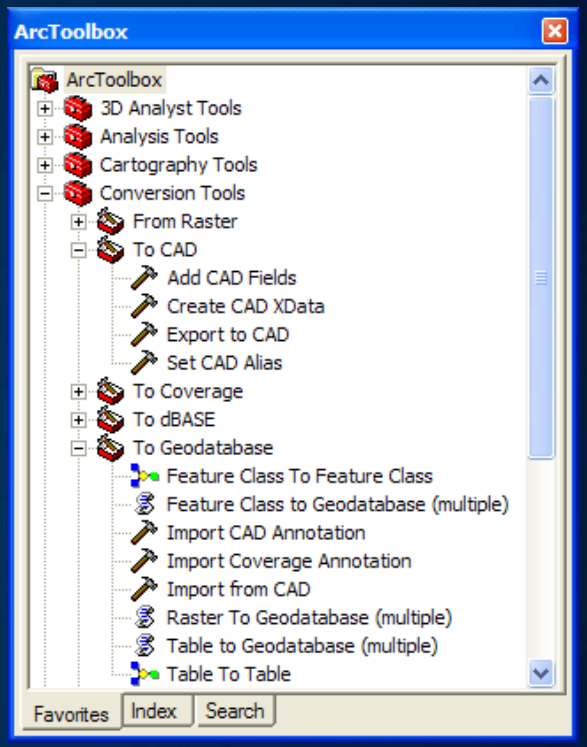


- ***New at 9.2*:**
  - **Georeferencing toolbar support**
  - **Simpler data access and better symbology**
  - **Many updates and fixes**

CAD Conversion Methods

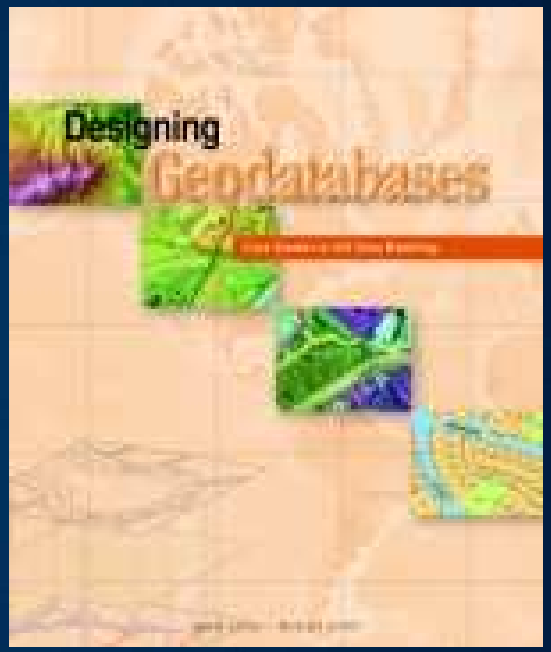
1) ArcMap
   - Layer Data Export
   - Editor Copy Features
2) Geoprocessing Tools:
   - Import from CAD Tool ***ArcInfo***
   - Import CAD Annotation
   - Copy Features ***ArcView***
   - Make feature Layer ***ArcView***
   - Select ***ArcView***

More later in presentation



Additional Reading

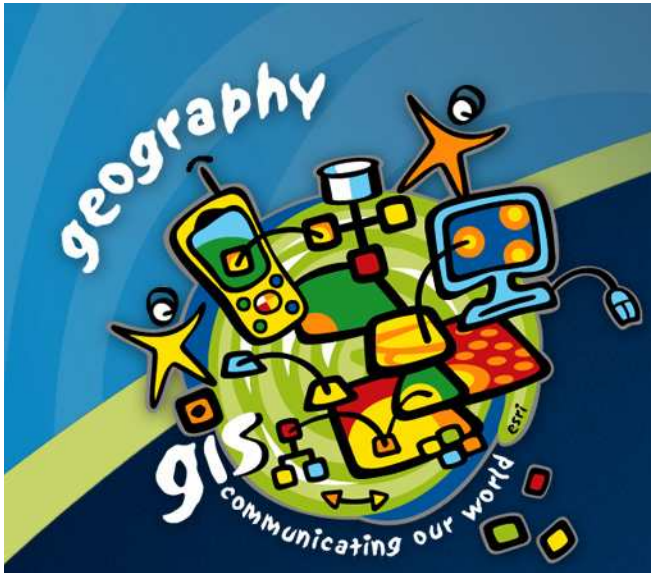
- *Designing Geodatabases*
  - Case Studies in GIS Data Modeling
- *Downloadable Data Models*
  - Industry specific
  - Promote and support standards
  - http://support.esri.com



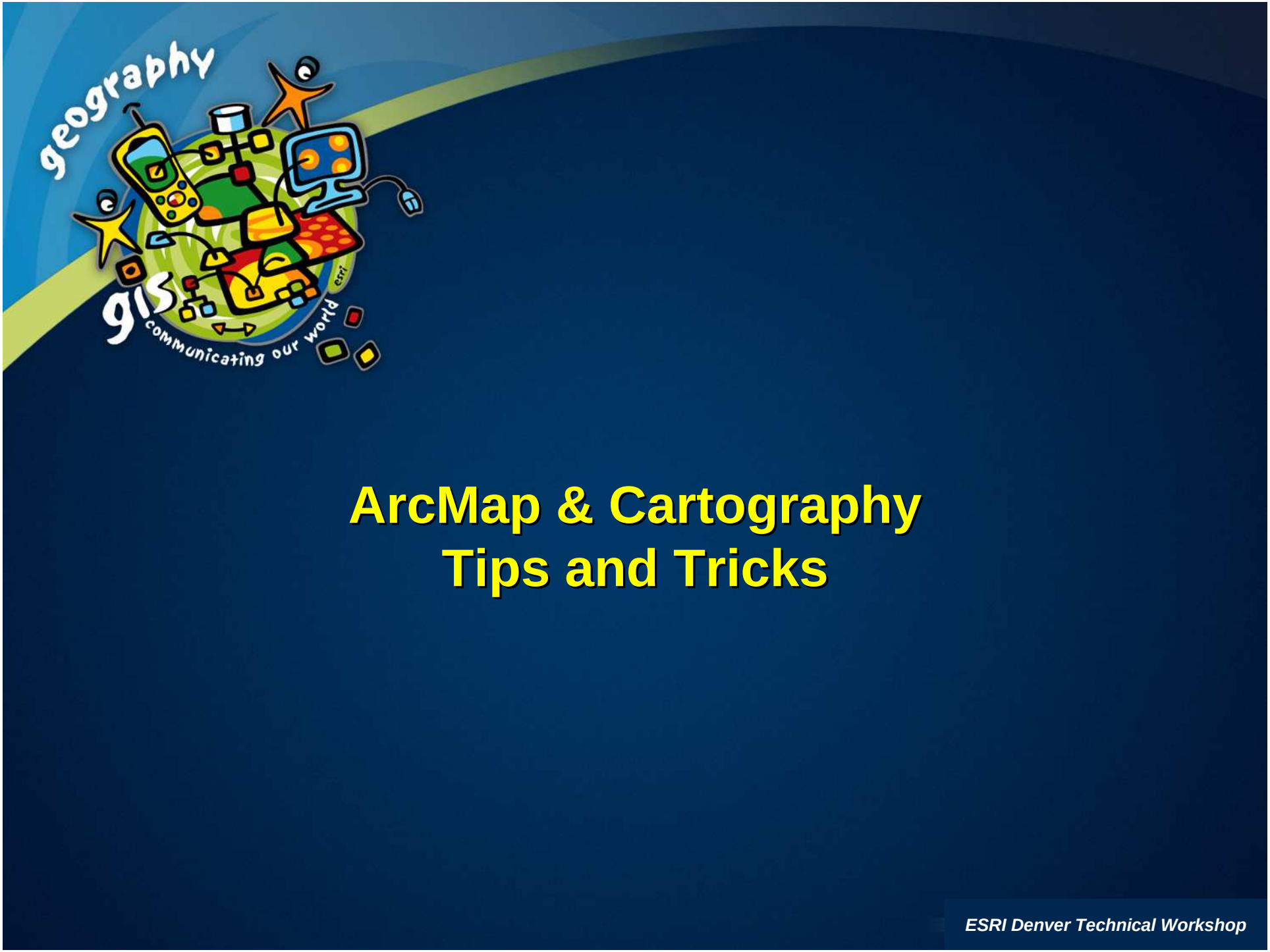
Training Resources

Instructor-Led Training

- Building Geodatabases
  - Introduction to the geodatabase, Advantages of File geodatabase, Geodatabase validation , vector data, raster data, topology, relationship classes, create and edit annotation, geometric network editing and tracing
- Introduction to the Multiuser Geodatabase
  - Geodatabase basics, Understanding personal/ workgroup/ enterprise geodatabases, connecting to the geodatabase, versioning concepts, optimize performance of client applications
- Data Management in the Multiuser Geodatabase
  - Create connections to ArcSDE, Design/ load/ and manage vector and raster data, architecture and workflow of multiuser editing.



Questions and demo



ArcMap & Cartography Tips and Tricks

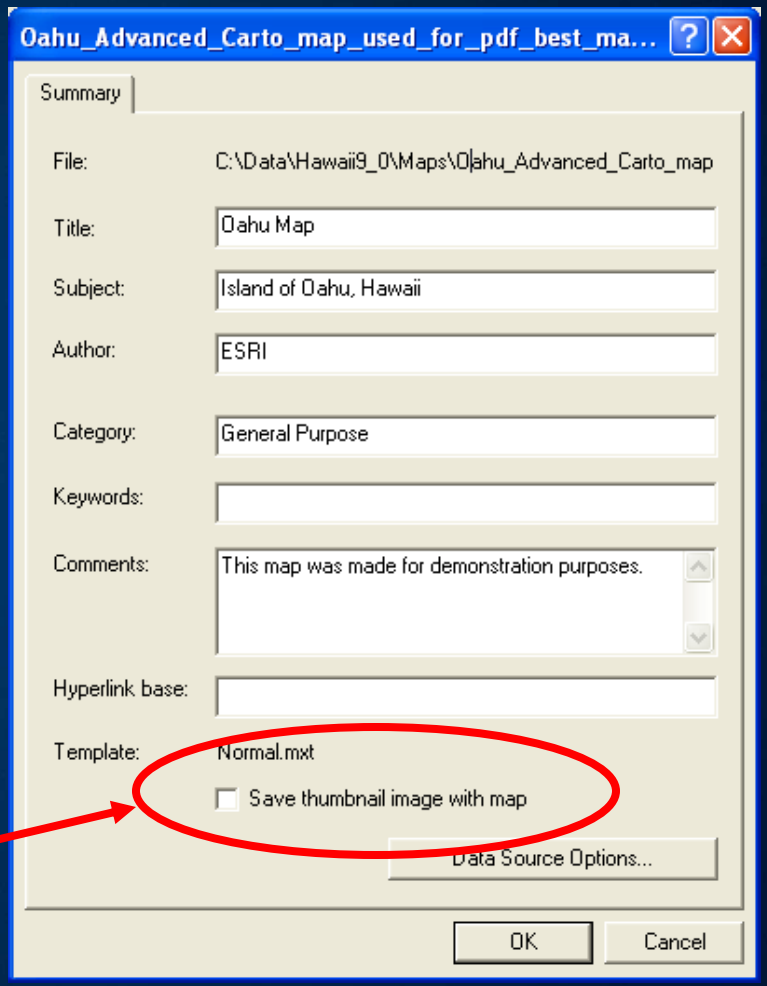
Section Outline

- Maps and Layer management:
  - Managing map documents, ArcMap Navigation, My Places
  - Managing Layer files, Coordinate systems, Labeling and annotation
- Symbology
  - Style manager, managing symbols,
  - Symbol levels, Advanced Drawing options
- Layouts & Sharing maps:
  - Templates, Layout tools
  - Exporting & Printing maps

Managing Map Documents

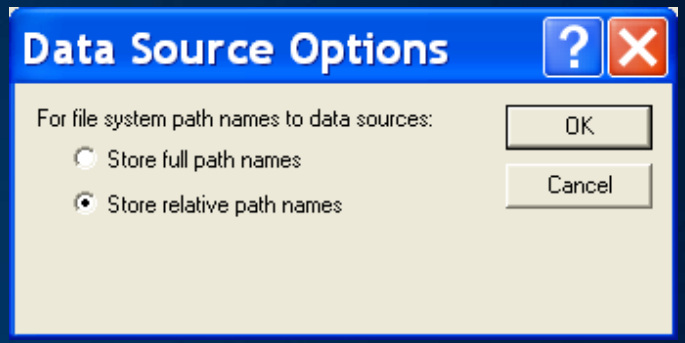
- File > Properties > Uncheck ‘Save thumbnail image with map’ for smaller mxd file size and faster saves
- File > Save As to save to new file
  - Reduces file size
- File > Save a Copy to create a backwards compatible mxd file (e.g. 9.1, 9.0)

Save time when saving .mxd

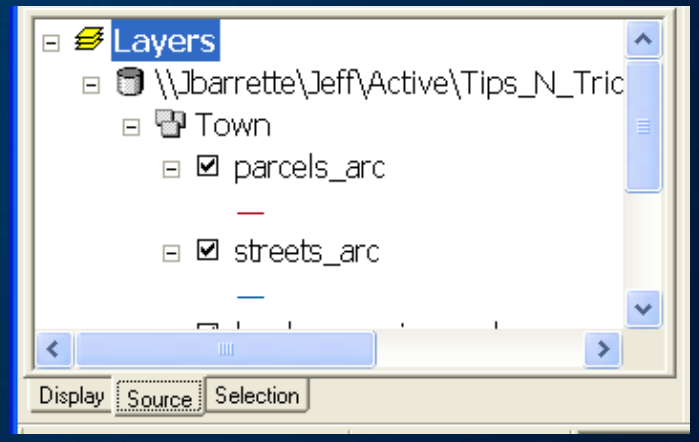


Relative Paths

- Easier to package data
  - File > Map Properties > data source options



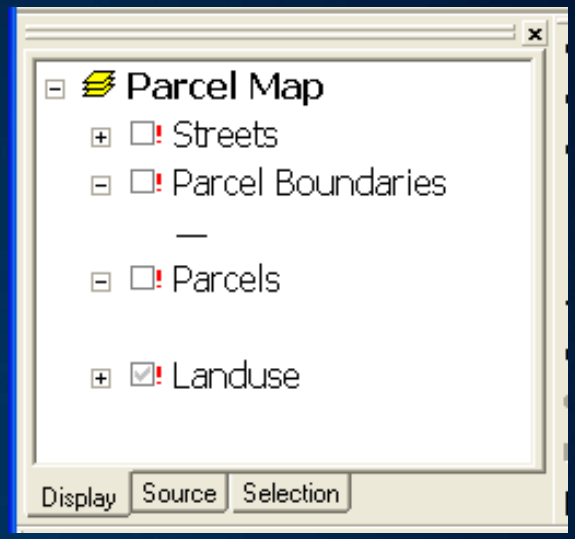
- UNC paths work well for people on the same network
  - Add folder via my network neighborhood



Repairing Broken Links

(or for existing layers that have updated extents or new file location)

- Repair a single layer via Layer properties > Source tab



- Repair multiple layers:
  - Click on red exclamation
  - Layer context menu > Data > Set data source

- Set MXD data sources via ArcCatalog

Map Navigation

- Many time-saving short cuts
  - Z = Zoom In
  - X = Zoom Out
  - C = Pan
- Navigating with your mouse (Roller wheels)
- Data Frame AND Layout Views
- ArcMap Tools > Options > General Tab

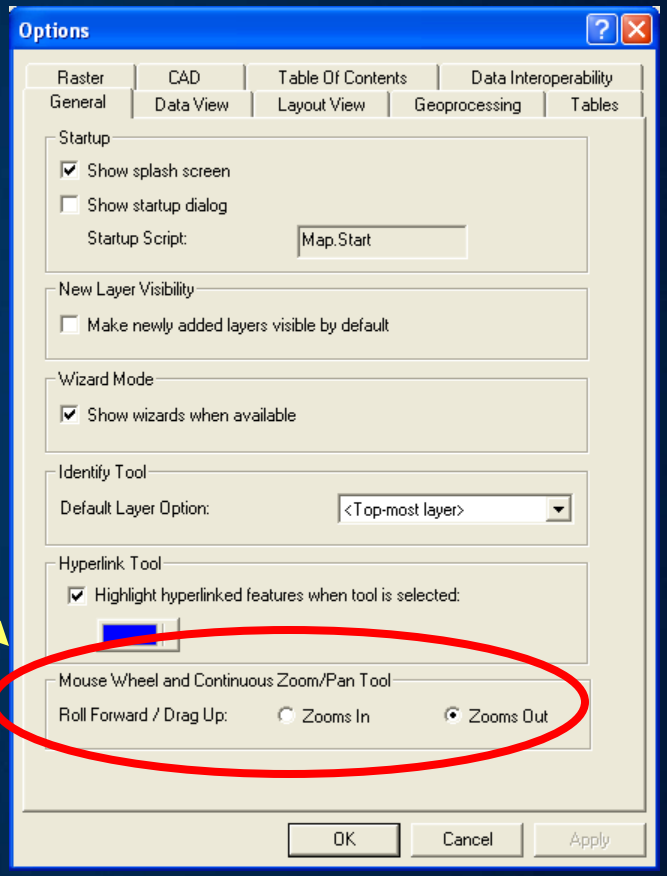
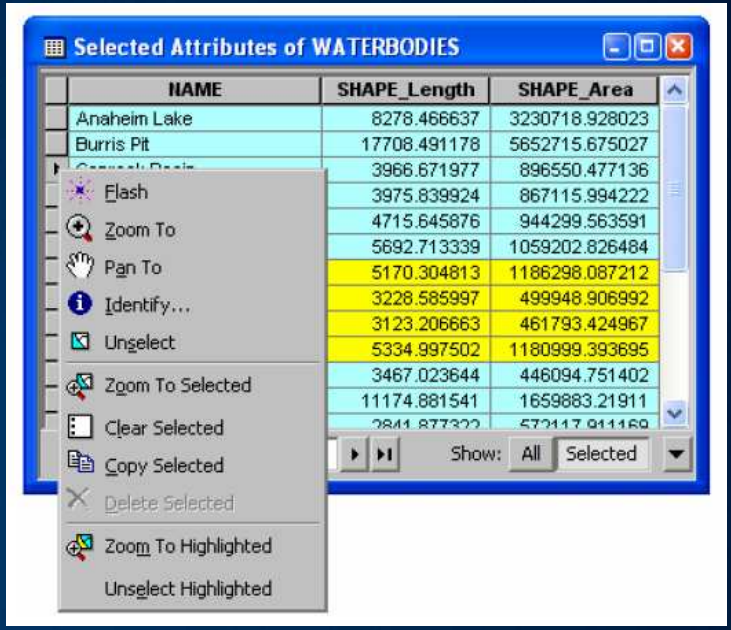
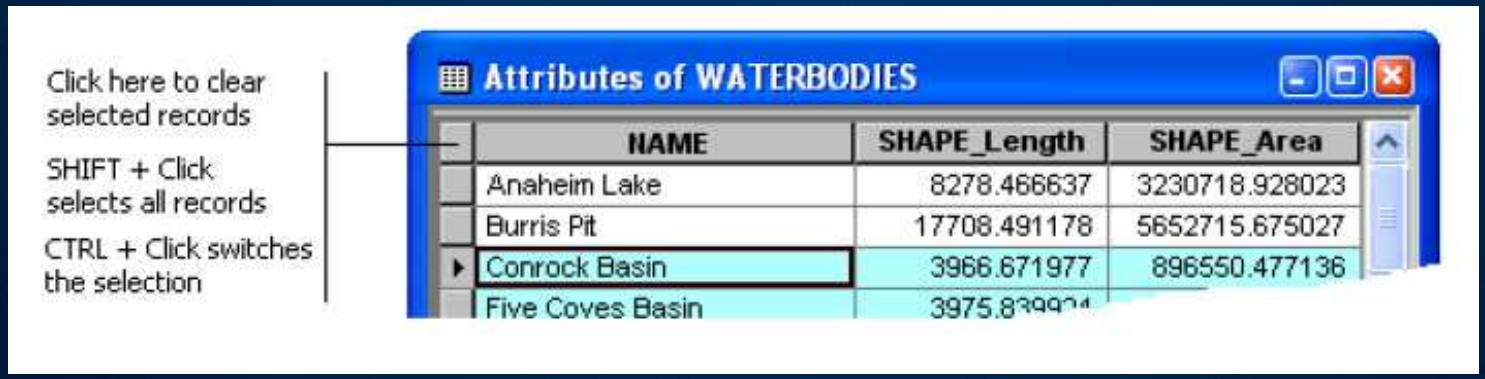


Table Window Navigation

- Shortcuts and Context menu time-saving clicks *many New at 9.2*

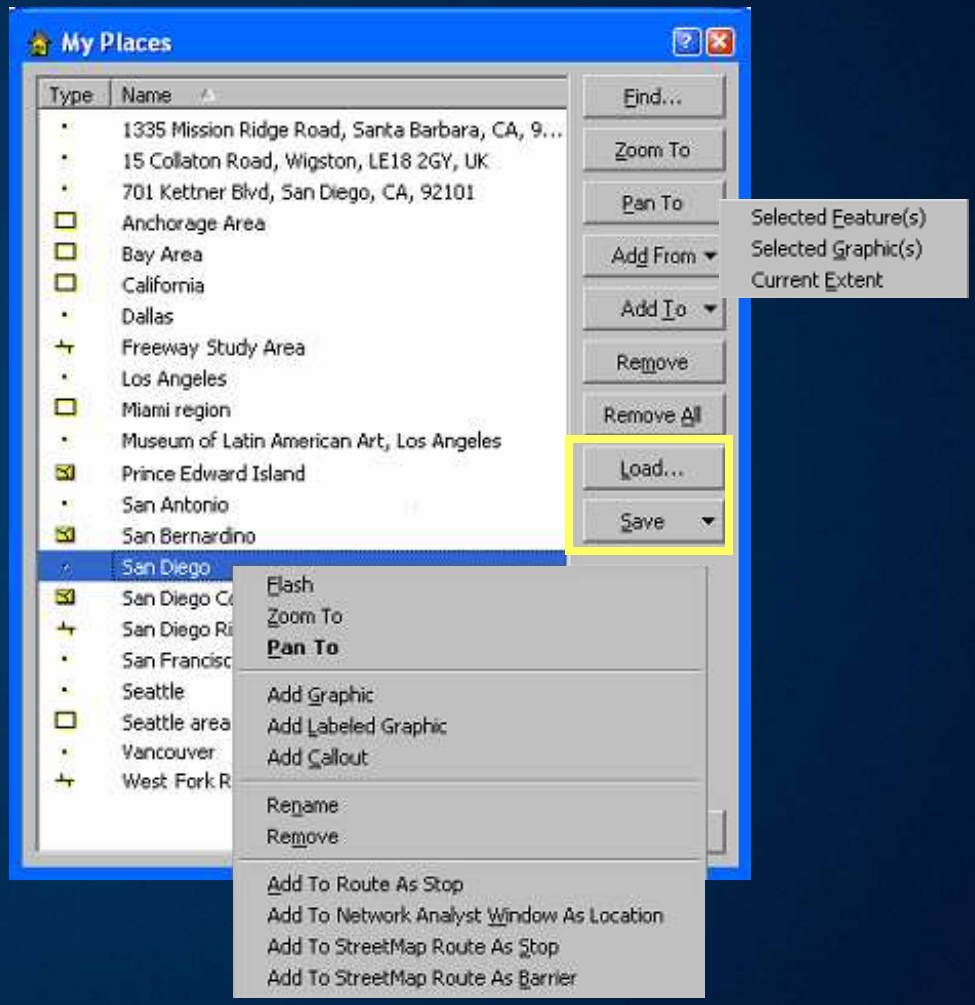




My Places

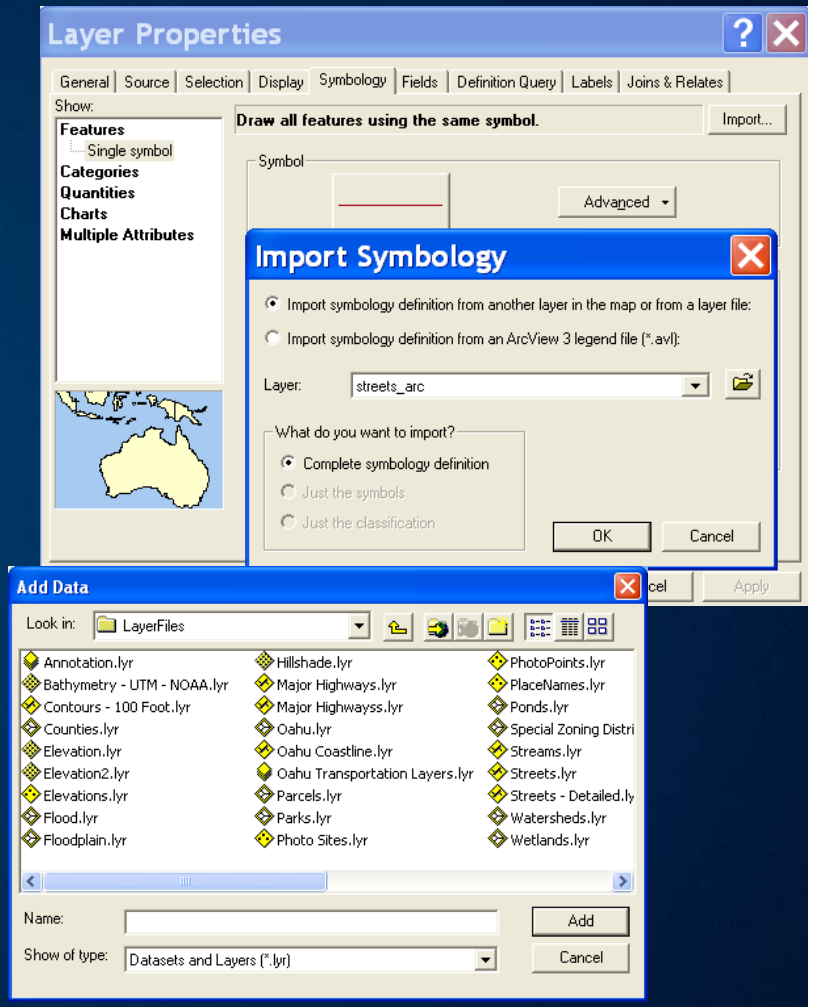
New at 9.2

- ArcMap > Tools > My Places
- “My Places.dat”
- Share with other users



Layer Files

- Reference to a data source
- Defines how data should be symbolized on a map
- Import symbology from a layer
- Easy to reuse
- Stored in map documents (.mxd) or saved individually (.lyr)
- Can be stored with relative paths

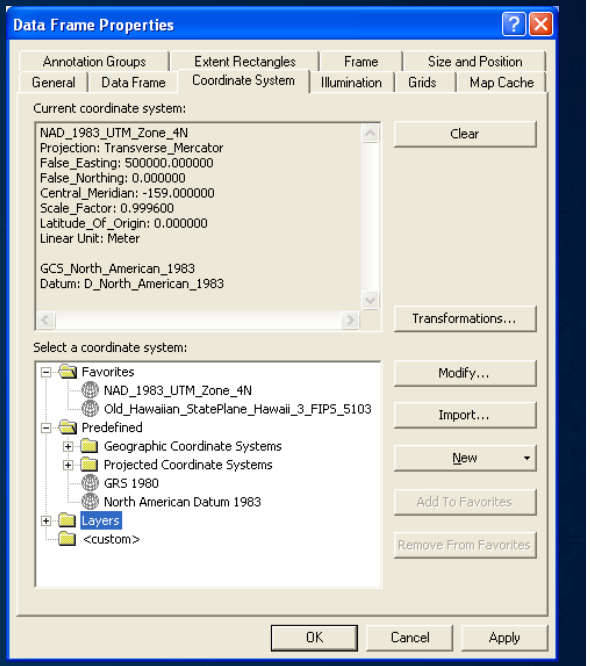


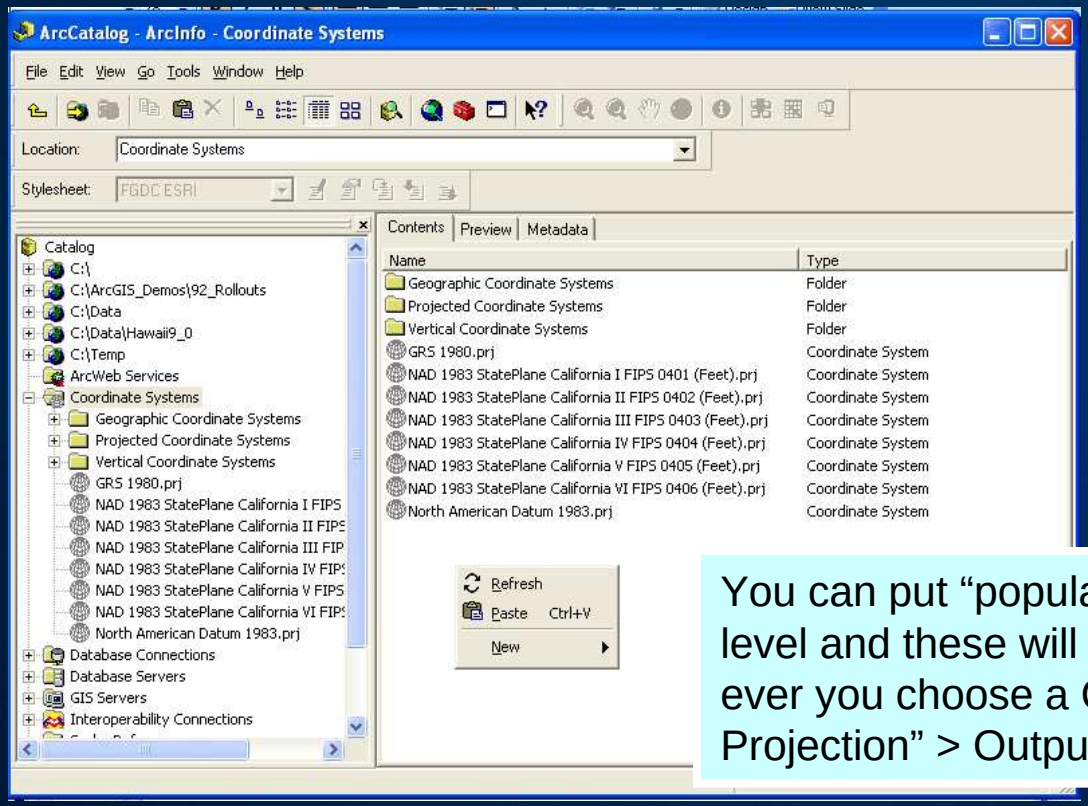
Coordinate Systems and Projection on the Fly

- Define the coordinate system for all data
  - Define Projection Tool (*Also in Batch at 9.2*)
  - ArcCatalog > Right click data > Properties
- First layer in map's data frame assigns projection
  - Data frame > Properties > Coordinate System tab
- Layers added to map will project on the fly to this coordinate space
- You can change it or "Clear" it to stop projection on the fly

Choosing Coordinate Systems

- Data frame Favorites
- ArcCatalog Coordinate Systems

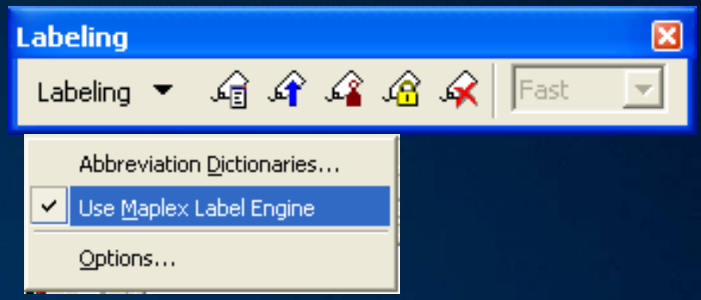


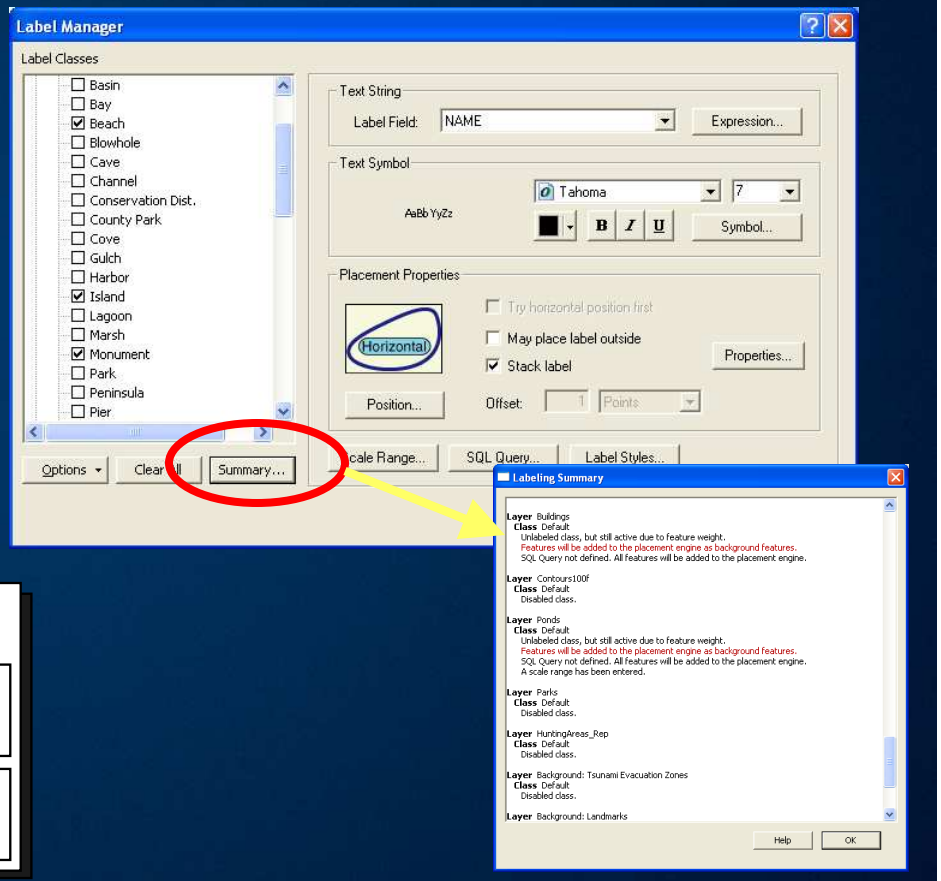


You can put “popular” Coordinate systems at the top level and these will be the “first” to appear where ever you choose a Coordinate System, e.g. “Define Projection” > Output parameter.

Labeling

- Labeling Toolbar and Label Manager save clicks
- Show unplaced labels Label toolbar > Options
- Lock labels
- Summary Tool: Dialog specifies all rules and indicates potential problems





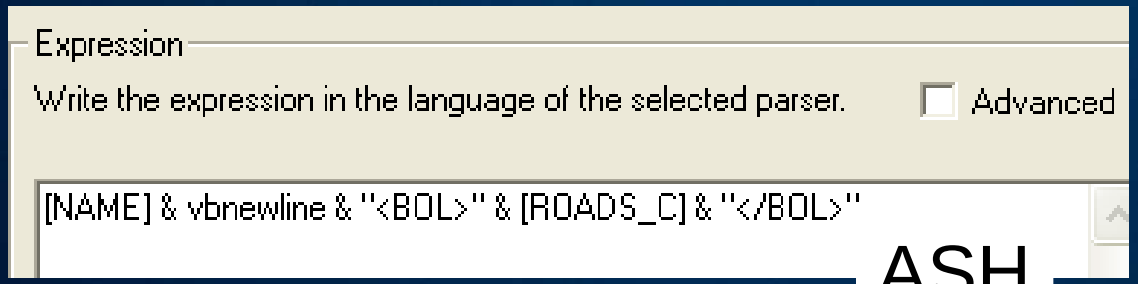
ESRI label engines

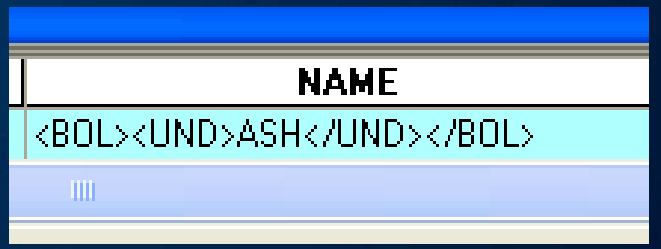
Maplex Label Engine
Standard Label Engine

Label Expressions / Format Tags

- Change the appearance to the entire string with label expressions
- Modify portion of the string with format tags
- Works throughout the application
  - Inserted text, tables, layer properties, etc

Insert characters from character map





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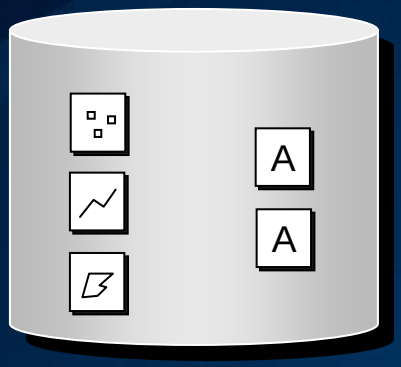
Labels versus annotation

- Map *text* in ArcGIS can be labels or annotations
- Text is a value from an attribute field

Labels	Annotation
Dynamically placed	Static: Manually positioned
Managed as a group	Managed individually
Stored in map document or layer file	Stored in map document or geodatabase
Always linked to feature	May or may not be linked to feature

The label to annotation cycle



Edit and manage annotation

Geodatabase Annotation Editing Tools

Convert to annotation

ESRI label engines

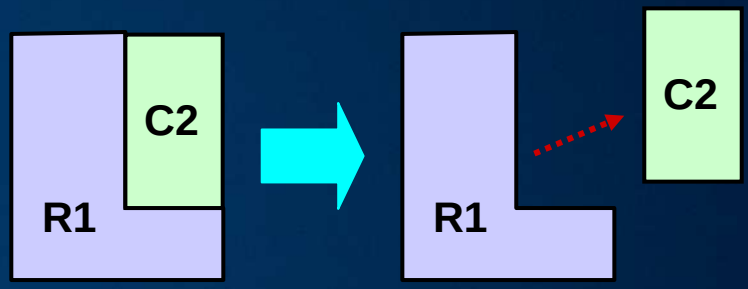
- Maplex Label Engine
- Standard Label Engine

Label maps

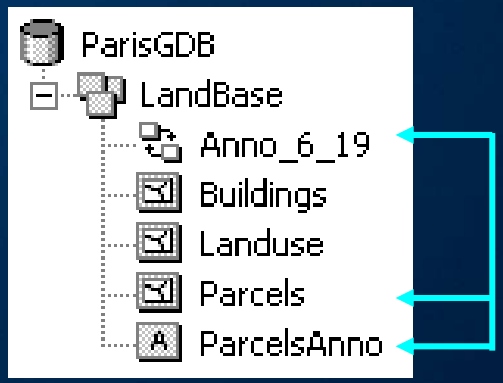
Digital maps

Geodatabase annotation

- Feature class that contains specialized text features
  - Properties include reference scale and symbology
  - May change properties of individual annotation features
  - May have multiple annotation classes (subtypes)
  - Edit same as features
- Two types
  - Standard: Stand-alone text
  - Feature-linked: Text from related feature attribute table

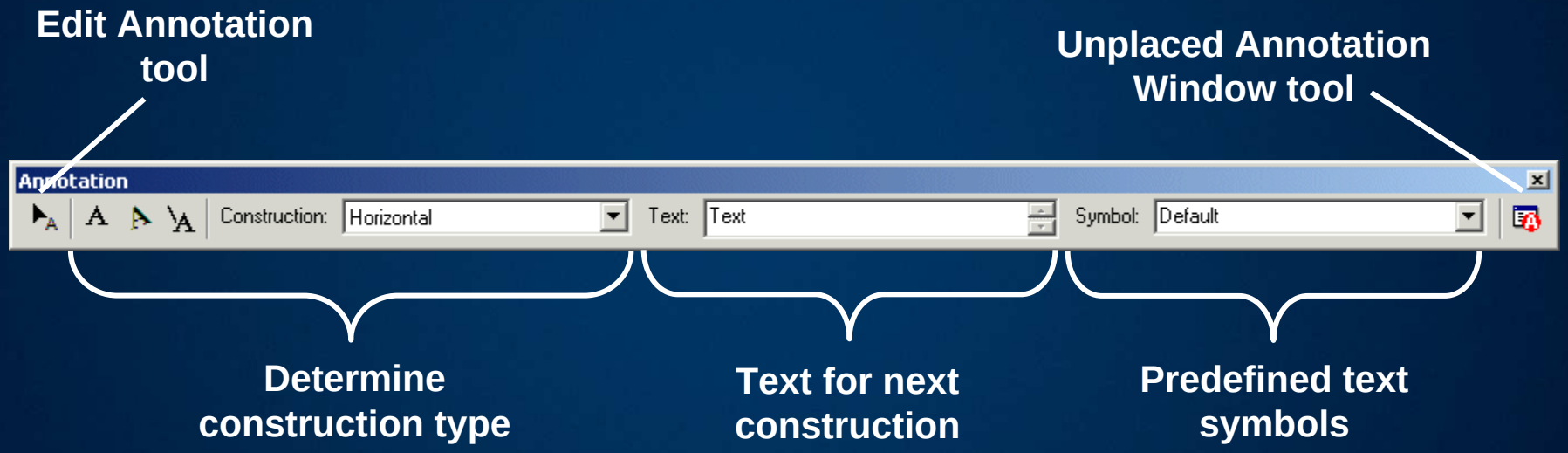


Feature-linked annotation



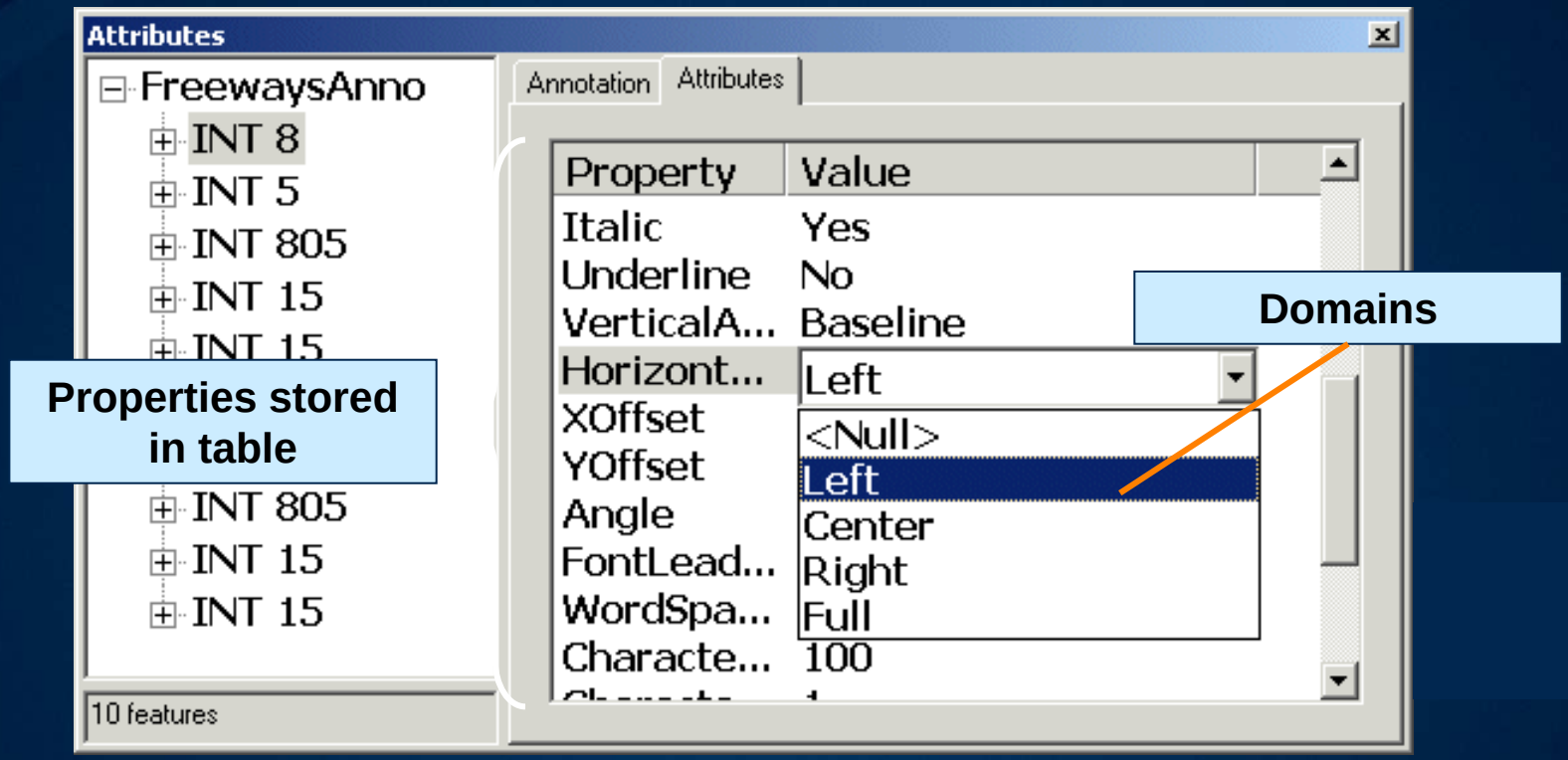
Annotation toolbars

- Central location for creating and editing annotation
  - Draw toolbar can be used for graphic text
- Tightly integrated with feature editing environment



Editing annotation

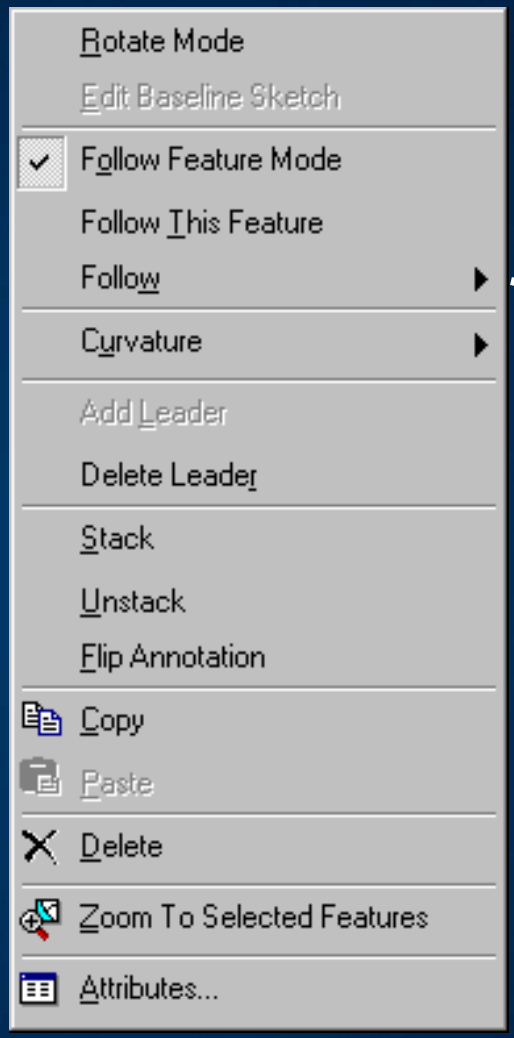
- Edit Annotation tool

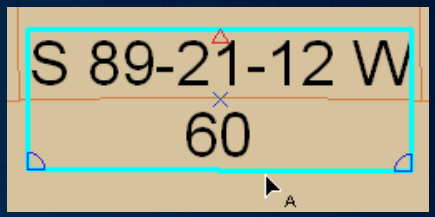


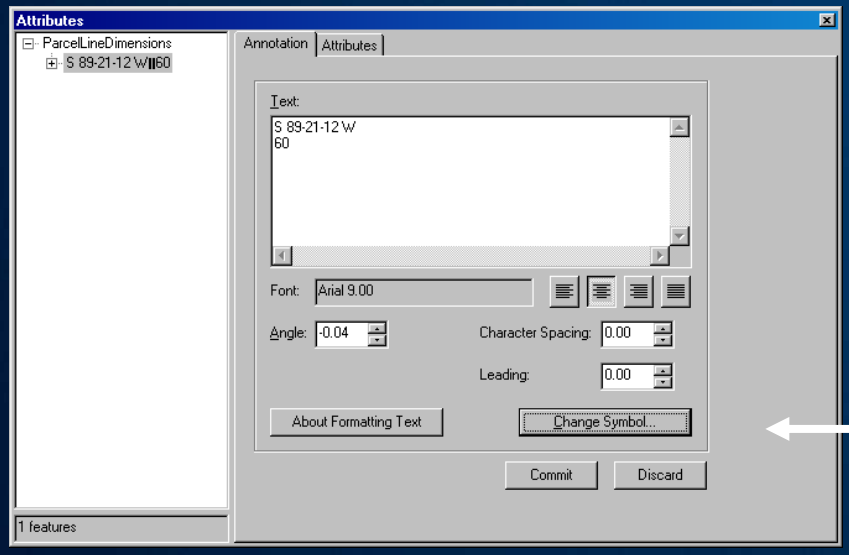
Allows for queries and bulk updates

Edit Annotation tool

- Use to
  - Interactively move, scale, and rotate annotation
  - Context menu options

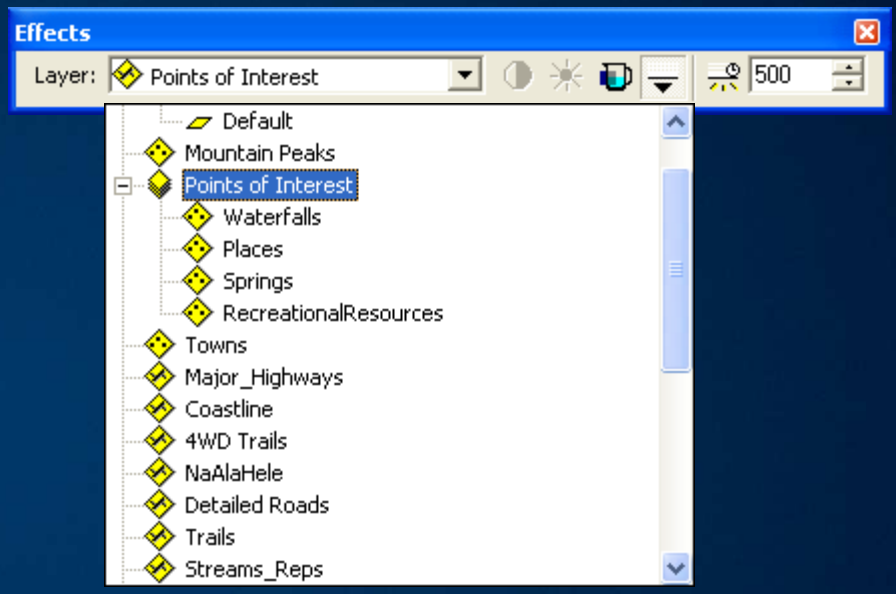






Effects Toolbar

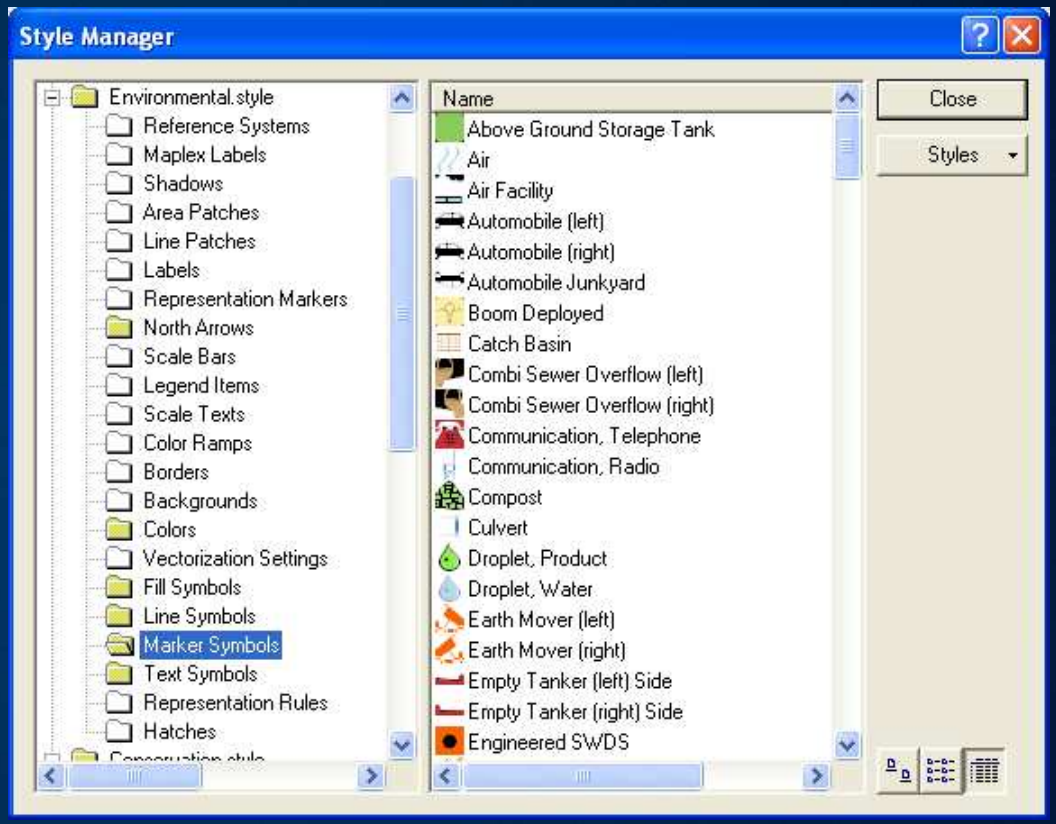
- Swipe tool, Flicker tools
- Transparency, other effects
- Layers dropdown list now matches TOC Group Layers: *New at 9.2*
  - Set the transparency to the same value for all layers in a Group quickly!



Managing Styles and Symbols

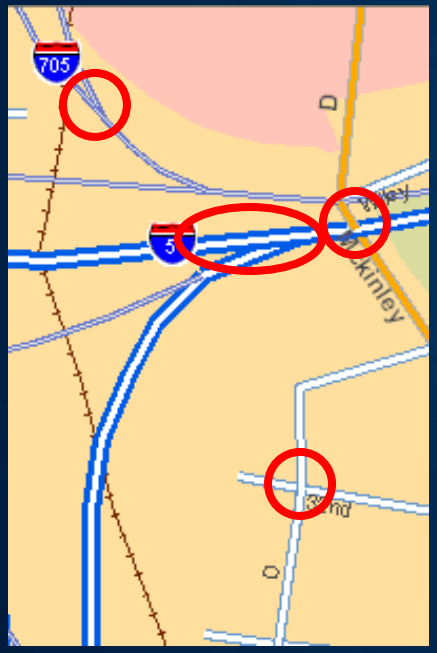
Style Manager

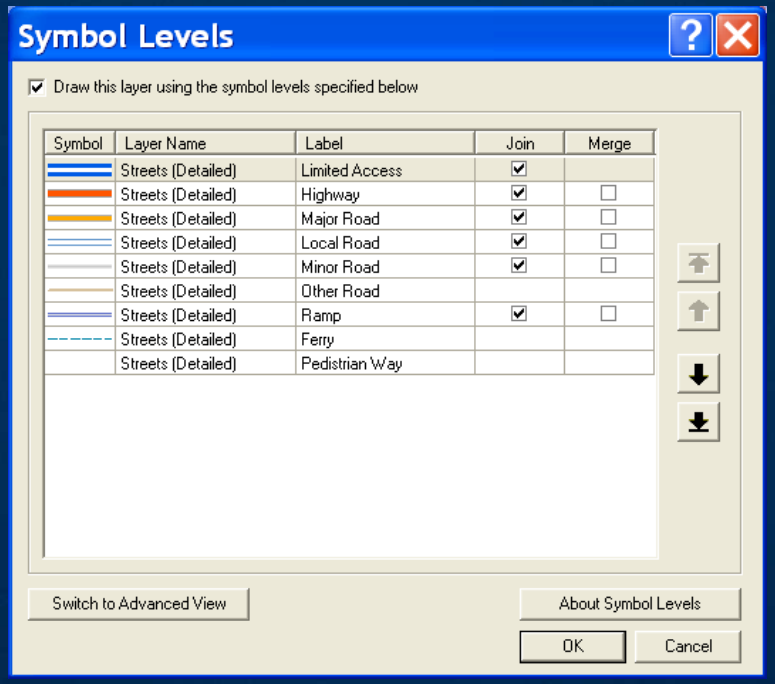
- Organize styles and their contents
- Create a new style or customize some of the styles provided by ArcMap
- ***Yellow*** folder: read/write permission
- ***Gray*** folder: read-only permission
- ***White*** folder: an empty folder

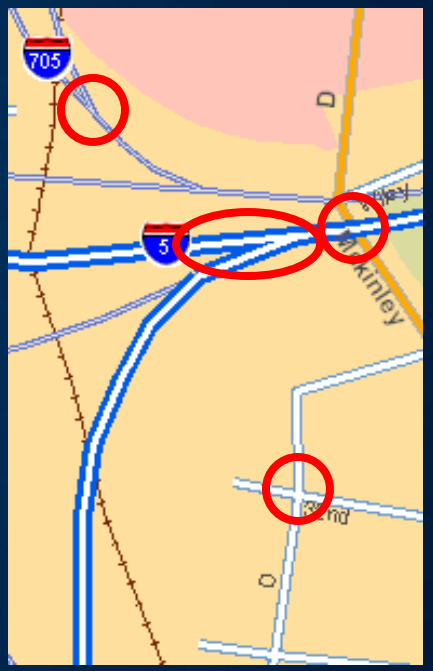


Symbol Levels

- Control draw, symbol order, join/merge rules
  - Overrides default drawing order
- Layer properties > Symbology tab > Advanced

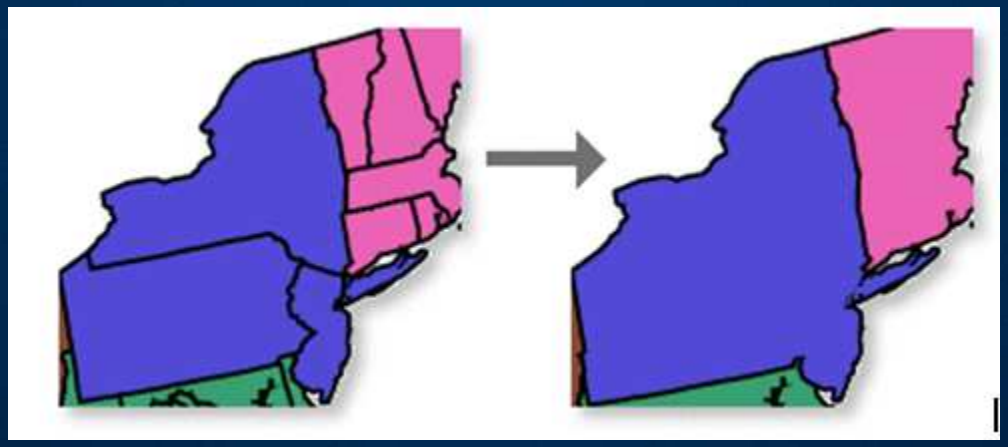






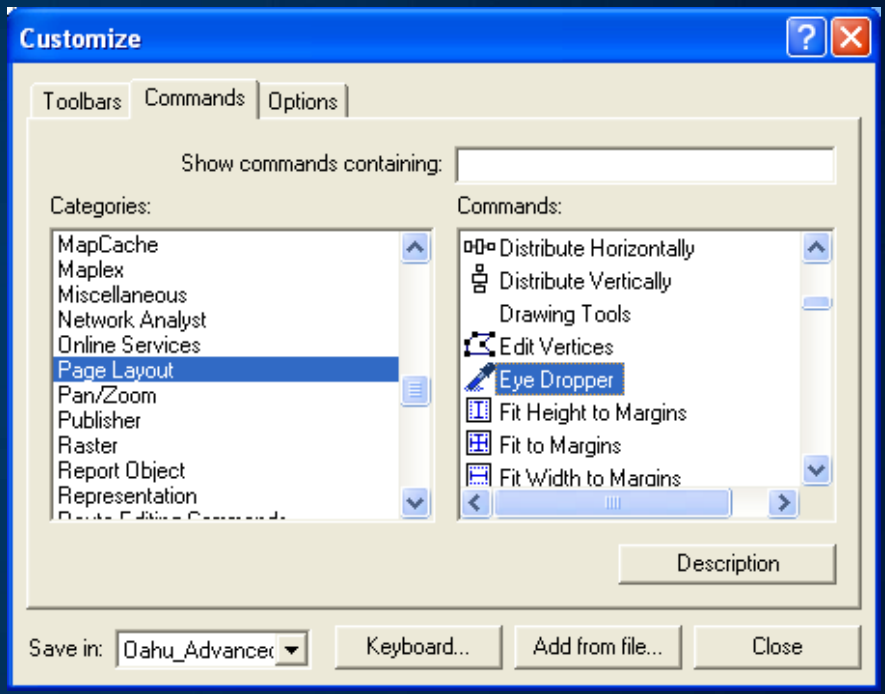
Symbology Trick: Dissolve on Attributes

- Eliminate boundaries between adjacent polygon areas with similar attribute value
- No need to perform GP Dissolve
- ArcInfo Workstation DROPLINE command



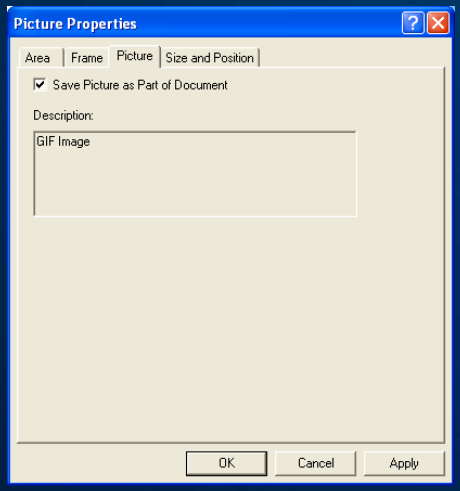
Eye Dropper

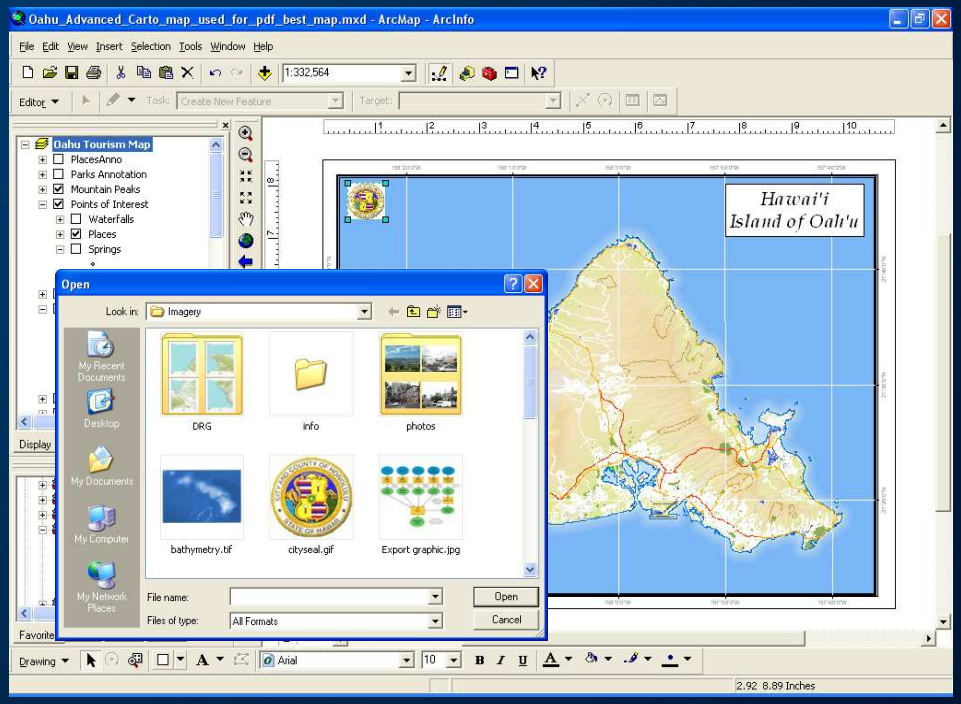
- Useful when you are creating a layer's symbology or a graphic element and want to match a color from an image or another graphic element
- Example: match transparency in a legend



Layout Graphic Elements

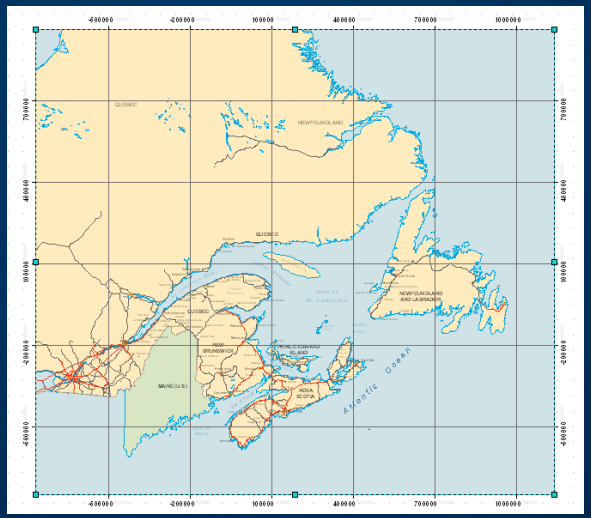
- Layout mode > Insert > Picture
- Save as part of document or not
- Must move pictures with map document if not saved within mxd
- File size of mxd!





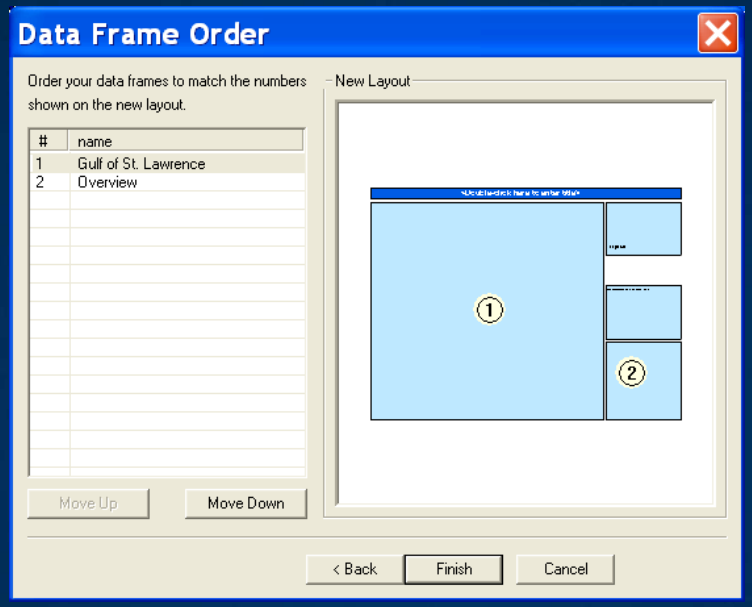
Reference Systems

- Via data frame properties > Grids tab
- Layout view only
- Graticule, measured, and index grids



Change Layout Using Templates

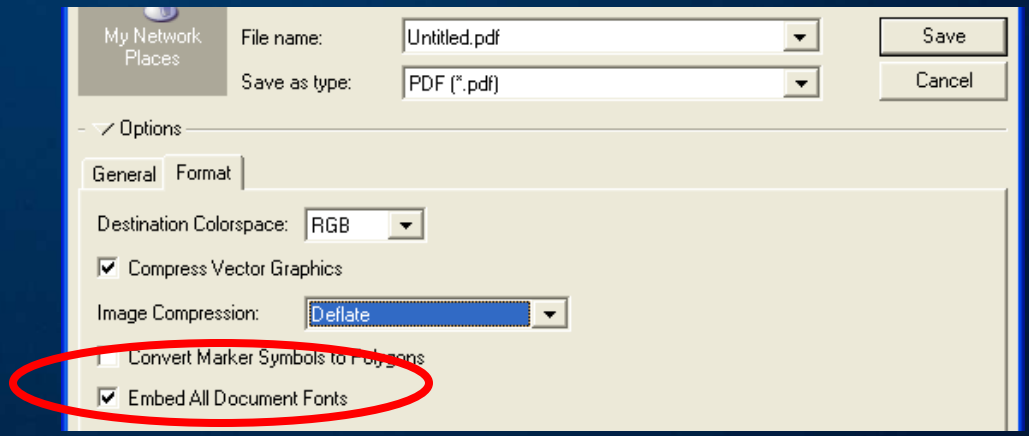
- Modify your content to match an existing map or template



- Increase productivity and standardize products
- Save map as template if built using Normal.mxt

Exporting a Map

- Many options: EMF, EPS, Ai, PDF, SVG, BMP, JPG, PNG, TIF, GIF
- PDF Export supports “layers” *New at 9.2*
- Tips:
  - Embed fonts with PDF
  - Output Image Quality settings



Printing

- Your success in printing maps depends on choosing or verifying these settings:
  - The page size of the map and the size of the paper in your printer
  - Printer engine and associated print drivers
  - Output resolution
- Keep in mind how these affect print time and quality:
  - Large page size (using D, E, or larger page sizes)
  - Contain raster images, such as orthophotography
  - Have transparent layers
  - Depend heavily on masking
  - Using Bitmap symbols (polygon fills, markers)
- ArcPress
  - Drivers work on computer, doesn’t take up printer memory
  - Meant to save time and money
  - Specify printer engine

ESRI Mapping Center - Windows Internet Explorer

http://mappingcenter.esri.com/

ESRI Mapping Center

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ESRI Mapping Center

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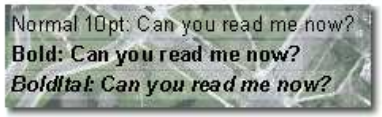
Welcome to Mapping Center

Mapping Center is about ***the use of ArcGIS in the graphic delivery of geographic information***. Its goal is to help you make great looking maps by using the same cartographic concepts and techniques that professional cartographers use.

Current News Feeds

Can you read me now?



Text and imagery have had an uneasy relationship since the day they met. Satellite imagery and aerial photographs are the ultimate variable background, which makes any text drawn on them hard to read....(read more)

Showing parcel hooks/ties with representation symbology

Last week we received a good question on Ask a Cartographer: is there a way to create parcel hooks with ArcGIS 9.2? After first discovering what parcel hooks were and finding an example of a typical case (shown at left), the answer seemed like a 'no-brainer'. Sure, just use the line decoration option on a marker line representation. However, after acquiring some parcel data that included parcel hooks (thanks to Greene County, NC) and seeing the circumstances where parcel hooks (they're also called land hooks or parcel ties) are placed on maps, I learned there are are several scenarios that need to be handled.... (read more)

Get to know your organization's developers

ESRI Mapping Center

Early last month Chris Sergent forwarded me an email via Mapping Center's submit a blog entry feature. Chris, who is a developer, was looking to connect with other ESRI developers. The spirit of Chris's email struck me as something we could all do with a little more of, so we put Chris's post up on the ESRI Developer Summit blog... (read more)

Search Mapping Center Content

ESRI Mapping Center

We've added new site-wide search functionality to Mapping Center. As our content and audience continue to grow, we will continue our efforts to make it easy to quickly find the information you need....(read more)

Mapping Center Web Site

- About Mapping Center
- About the Mapping Center Team
- Getting Started
- Site Map

Mapping Center Blog

RSS

- About the Blog
- Terms of Use
- Submit an Entry

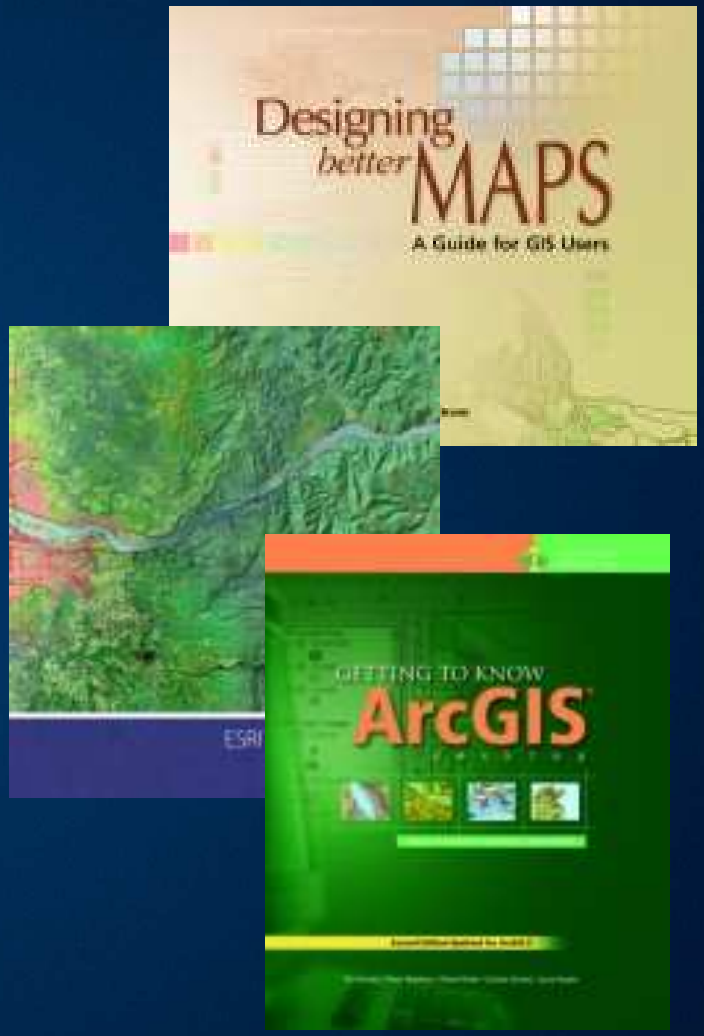
Announcements

Updated March 27, 2008

- Check out the presentation by Dr. A. Jon Kimerling, "Dotting the Dot Map, Revisted" on the Other Resources page. This intriguing presentation describes an alternative to dot placement that is more in keeping with how cartographers made dot maps by hand. Examples at the end of the presentation show how exclusion and inclusion layers can be used to improve dot placement using ArcGIS.

Additional Reading

- *Designing Better Maps: A Guide for GIS Users*
- *ESRI Map Books*
- *Getting to Know ArcGIS Desktop, Second Edition*
  - Basics of ArcView, ArcEditor, and ArcInfo, Now includes ArcGIS 9.2 trial software on DVD



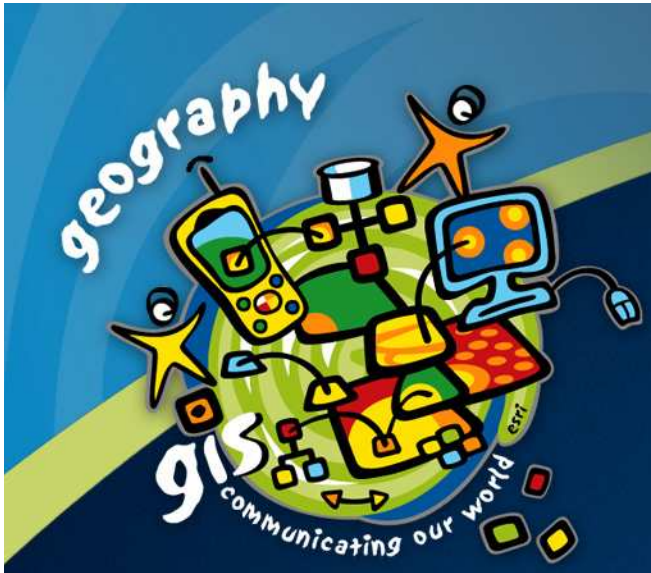
Training Resources

Instructor-Led Training

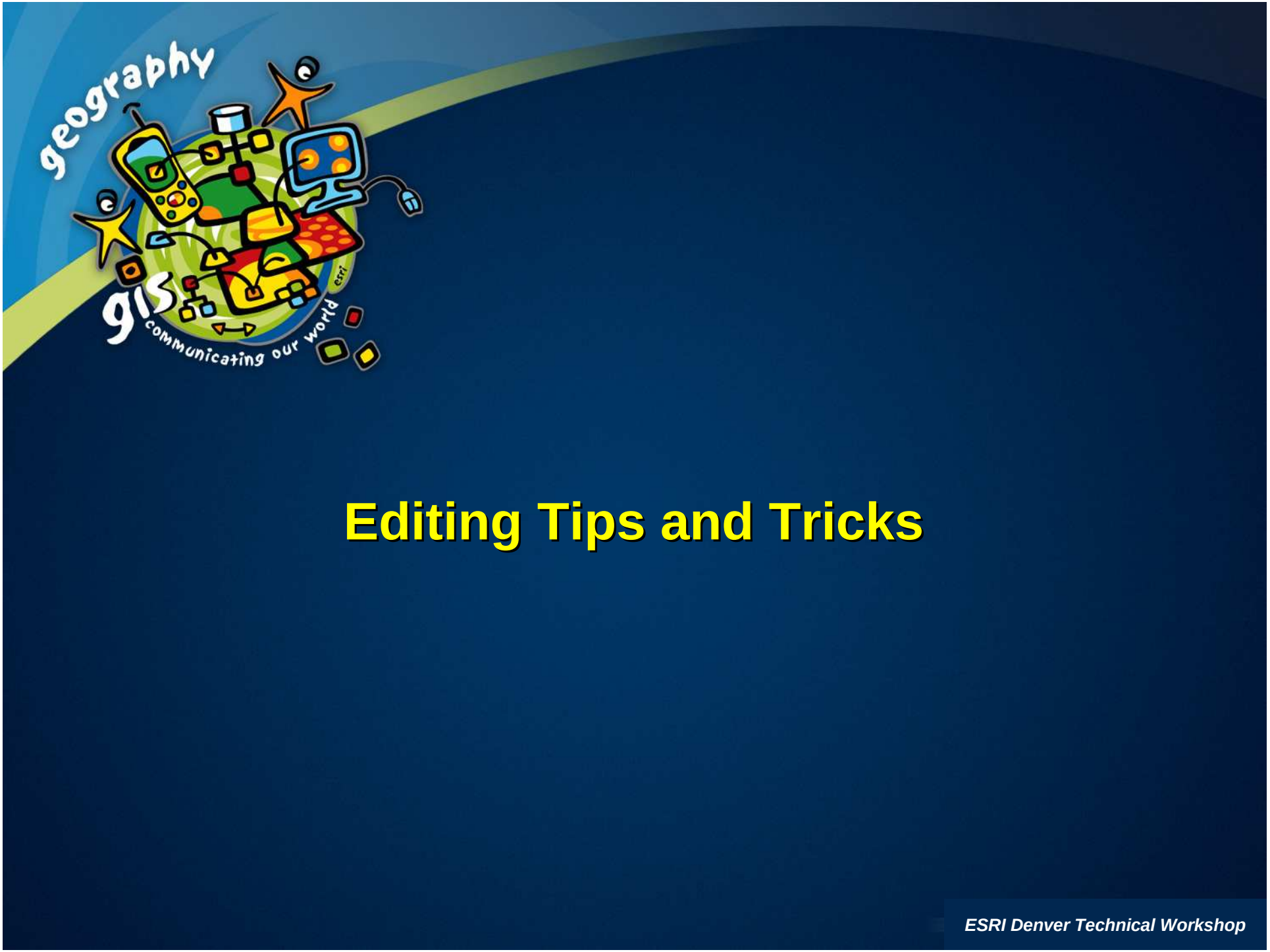
- Cartography with ArcGIS
  - Design process, feature symbology, thematic mapping, text and labels, annotation and dimensions, mapping raster data, creating layouts
- Advanced Techniques for Labels and Annotation
  - Virtual Classroom course

Virtual Campus

- Introduction to Cartographic Representations in ArcGIS 9.2
- Cartographic Design Using ArcGIS 9
- Making Better Map Layouts with ArcGIS



Questions and demo



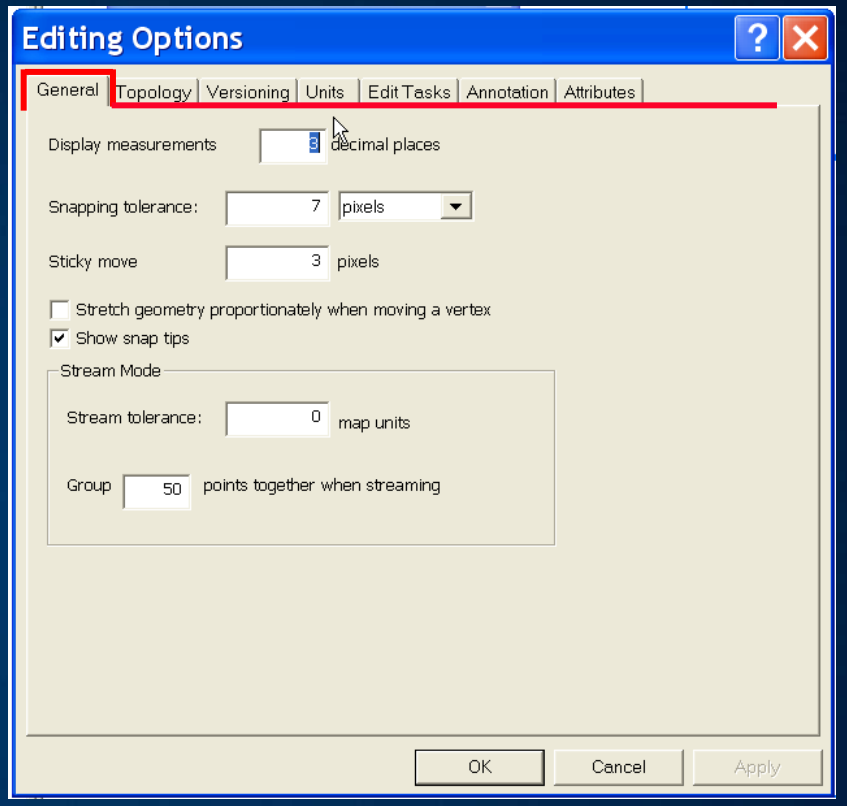
Editing Tips and Tricks

Section Outline

- General editing options
- Common Edit Tasks
- Editing Selected Features
- Productive Editing Techniques
- Solving Feature Adjustment Problems

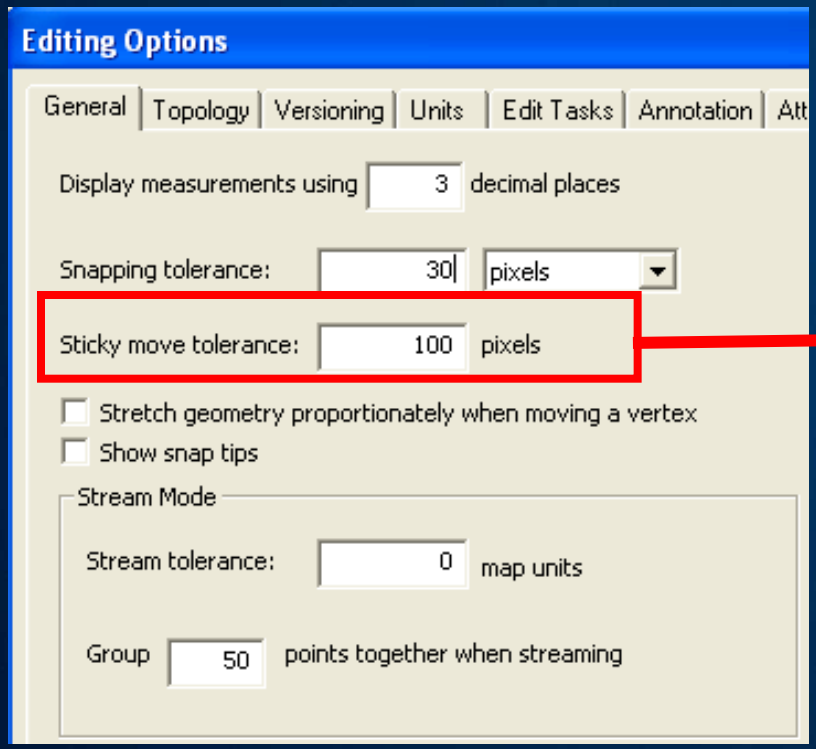
General editing options

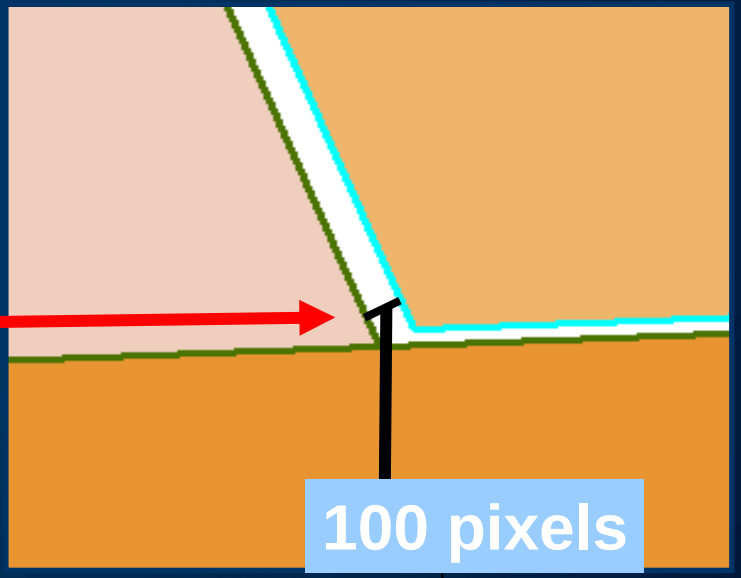
- Display precision
- Snapping tolerance
- Sticky move tolerance
- Showing snap tips
- Stream options



Sticky Move Tolerance

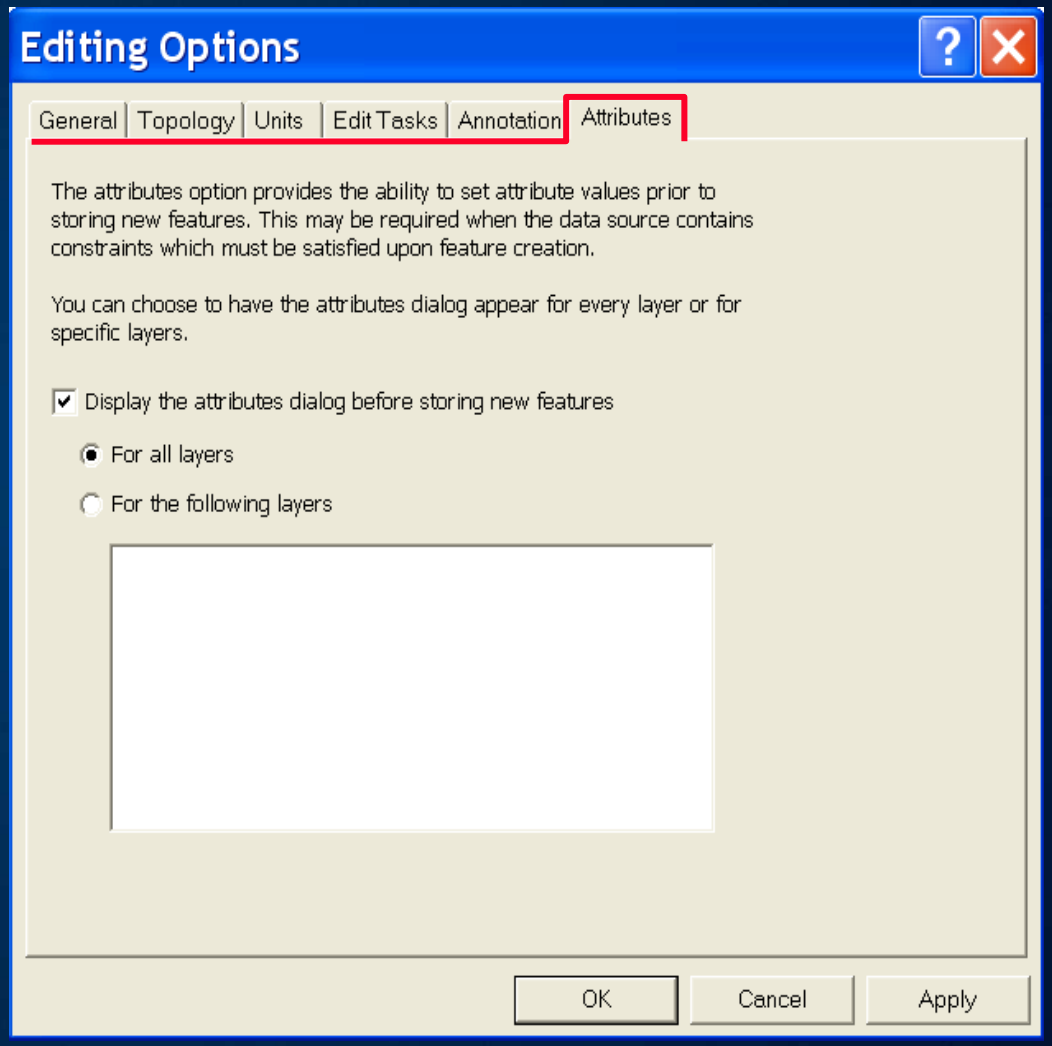
- Helps avoid accidental movement
- Prevents feature movement within tolerance
- Default is zero





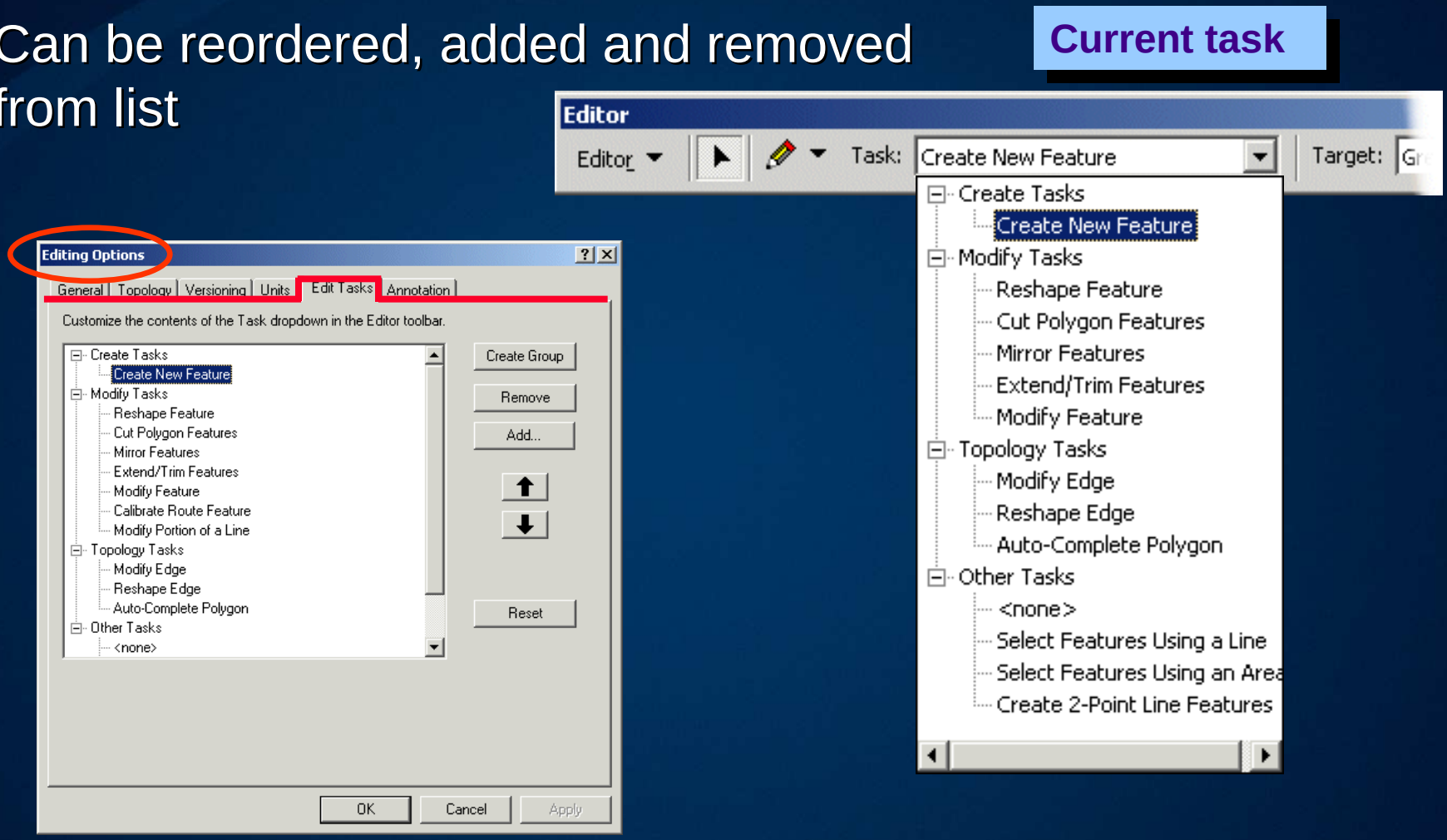
Attribute editing options

- Simultaneously create new features and set attribute values
- New at 9.2



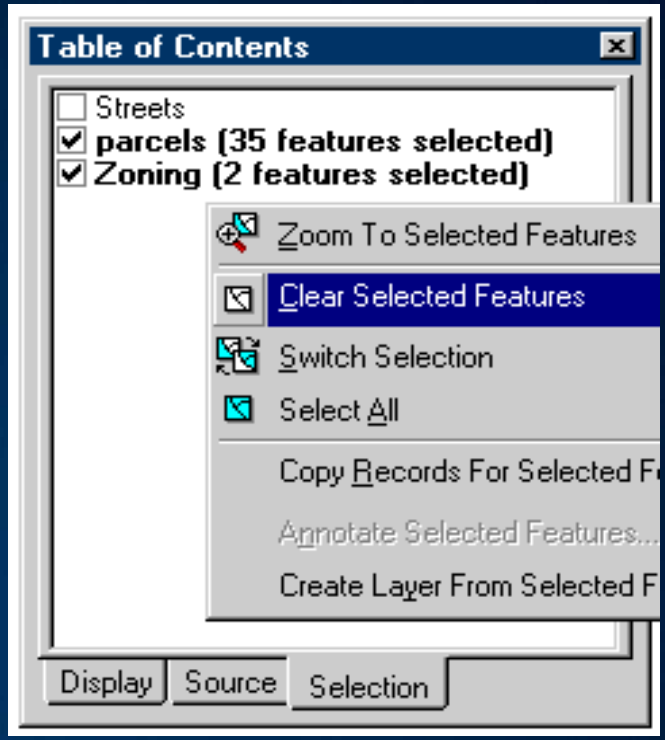
Edit tasks

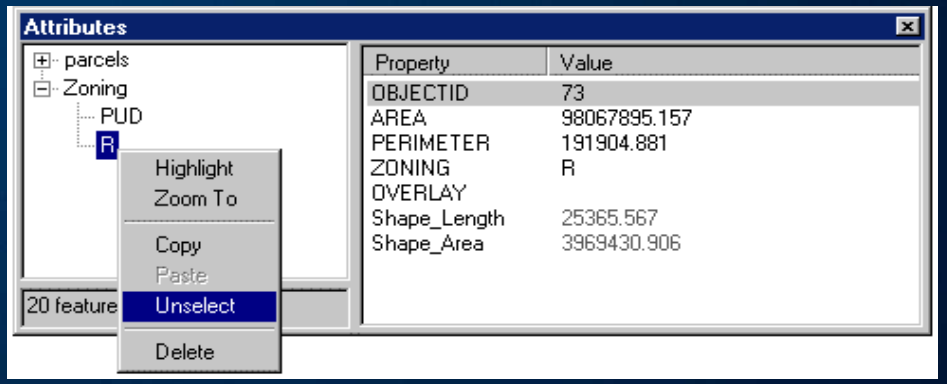
- Sketch tool works with the current task
- Can be reordered, added and removed from list



Modifying feature selection by individual layer

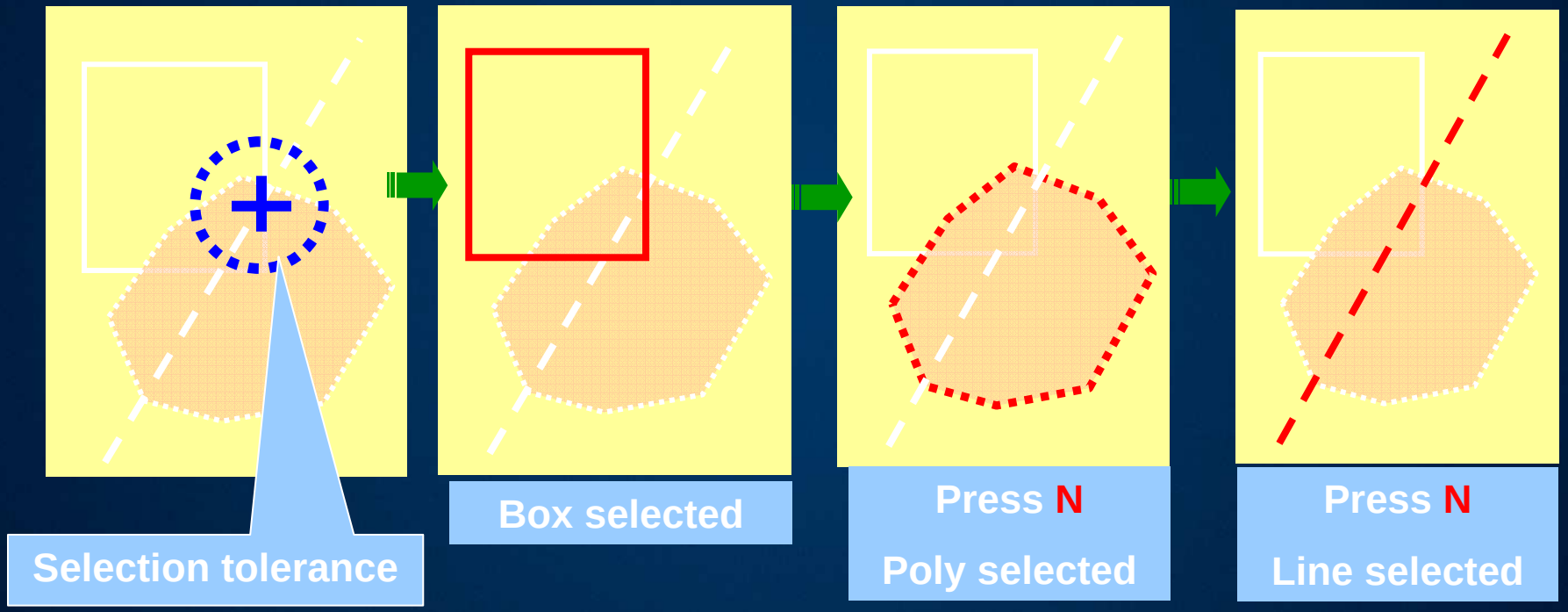
- Selection tab: right click on layer to:
  - Zoom to selected features
  - Clear selected features (for that layer only)
  - Switch selection (for that layer only)
  - Select all (for that layer only)
- Attributes dialog: right click on feature
  - Unselect features in a layer one at a time
  - Can work with multiple selectable layers





Selecting from overlapping selectable layers

- Use the Select “next” function
- Select feature, then press the **N** key
- Must point to first feature within the Selection tolerance

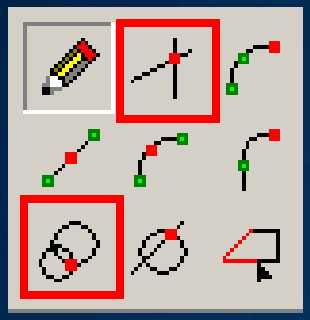


Use this technique with overlapping features

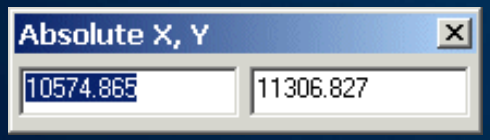
Productive Editing Techniques

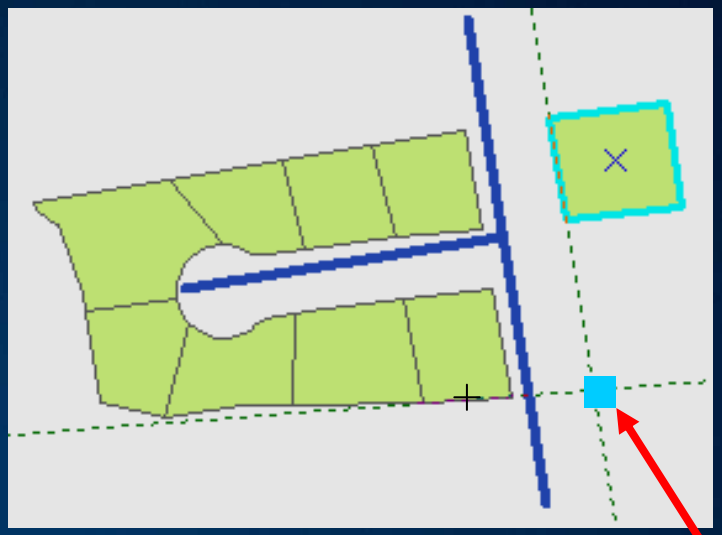
Constructing a vertex or point

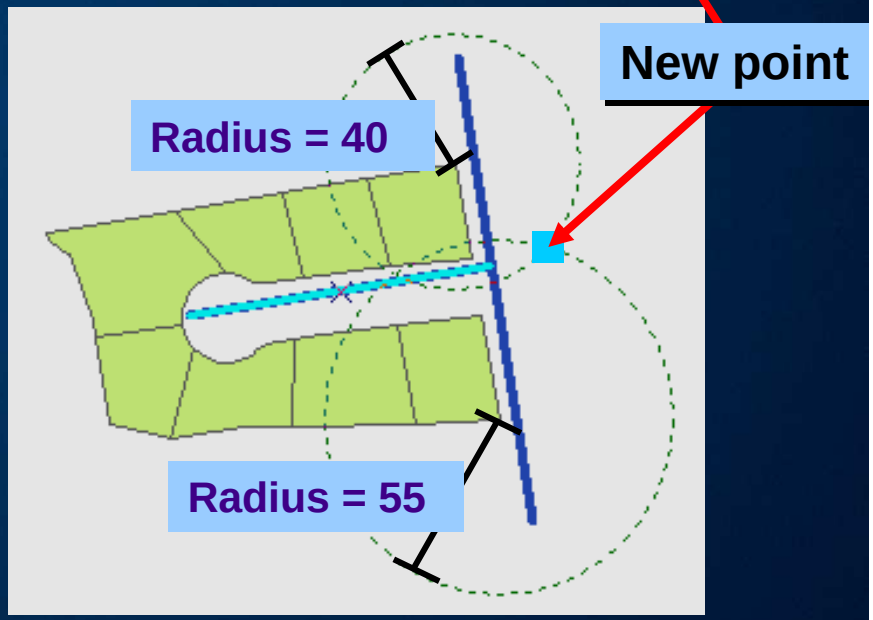
- Intersection
  - Adds a vertex at the implied intersection of two segments



- Distance-Distance
  - Adds a vertex at given distances from two points
- Absolute X,Y

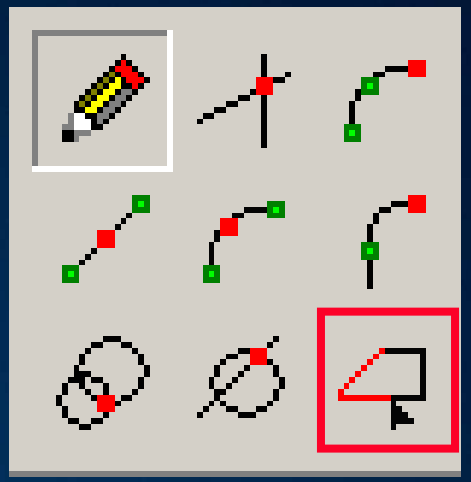


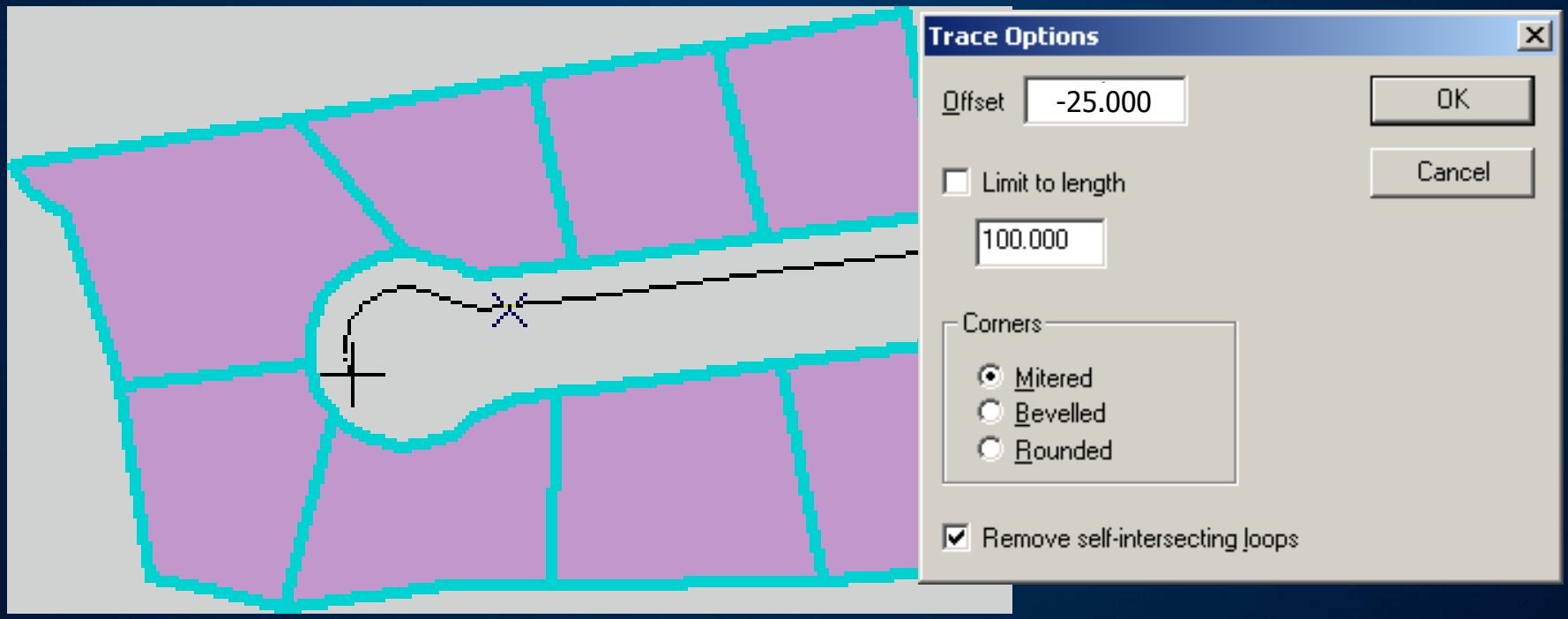




Using the trace tool

- Trace along selected features
- Select features
- Click to start and stop the trace
- Press O to specify an offset
- Used with the Zipper Task





Switching between sketch tools

How can you quickly switch from a sketch tool to another tool and back to the sketch tool again…….

Use shortcut keys: E, C, X, Z

- Use the “E” shortcut key to toggle between the Sketch tool and the Edit Tool.
- Use the “C” shortcut key to pan
- Use the “X” shortcut key to zoom out
- Use the “Z” shortcut key to zoom in

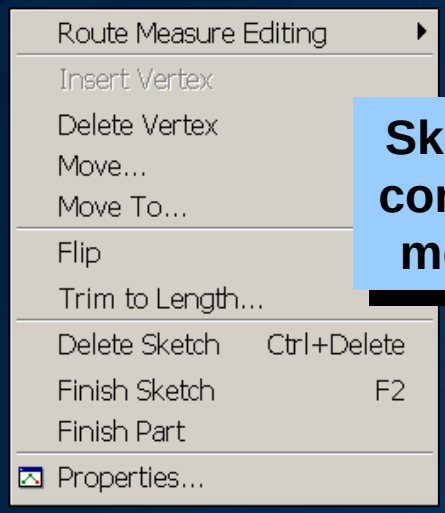
▼ Shortcuts common to all editing tools

Shortcut key	Editing function
Z key	Zoom in
X key	Zoom out
C key	Pan
V key	Show vertices
Esc	Cancel
Ctrl + Z	Undo
Ctrl + Y	Redo
Spacebar	Suspend Snapping

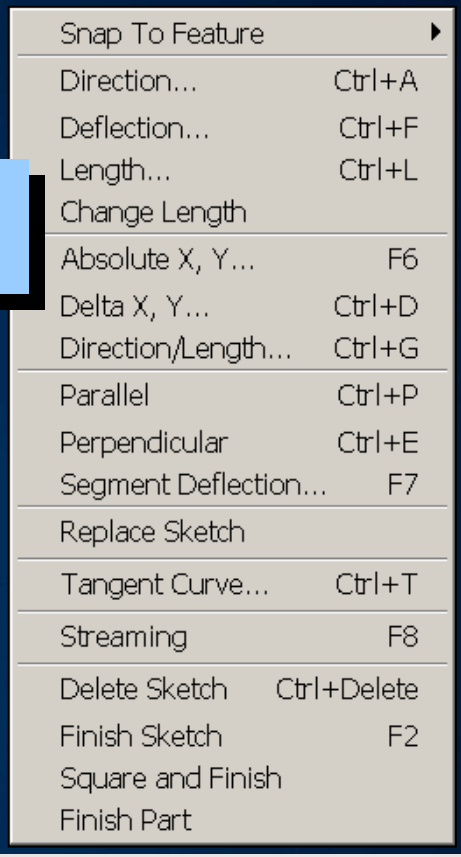
To see a list of all the editing shortcut keys, in ArcGIS Desktop help, on the Index tab enter “*shortcuts, for editing in ArcMap*”

Sketch context menus – Sketch constraints

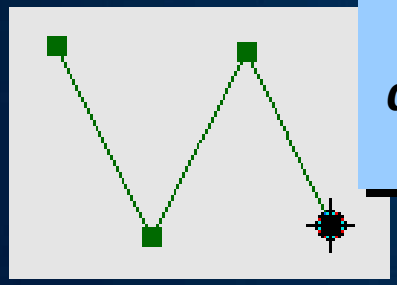
- **Right-click is location sensitive**



Sketch context menu

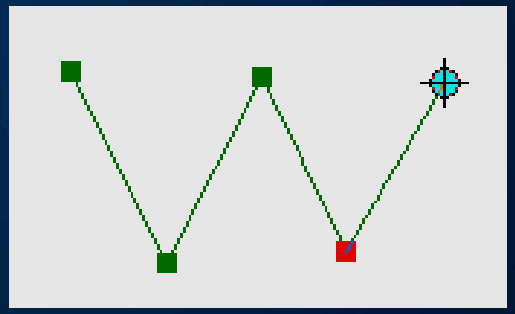


Sketch Tool context menu



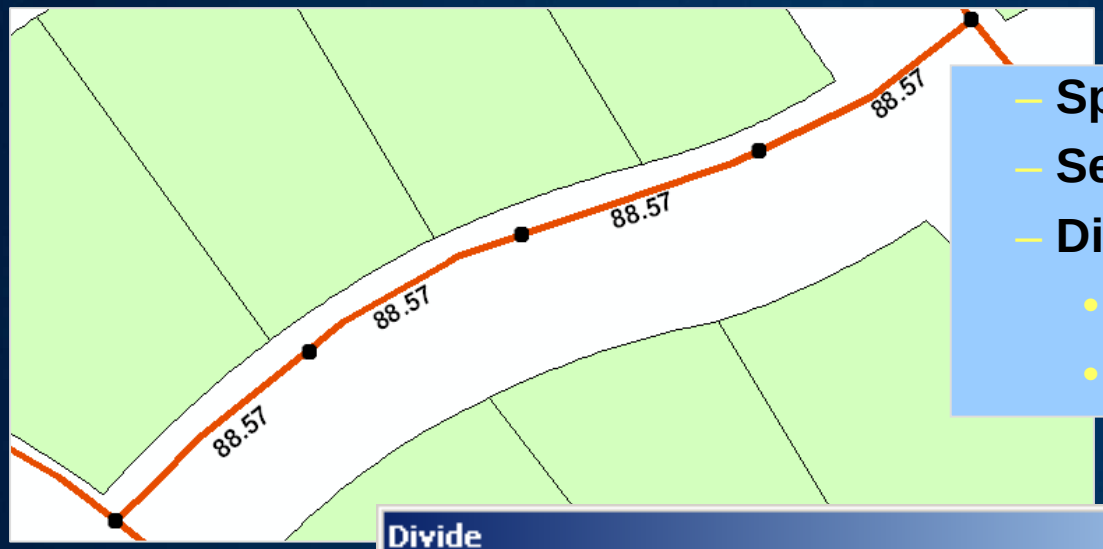
Cursor *directly over* last vertex

Cursor *away from* last vertex

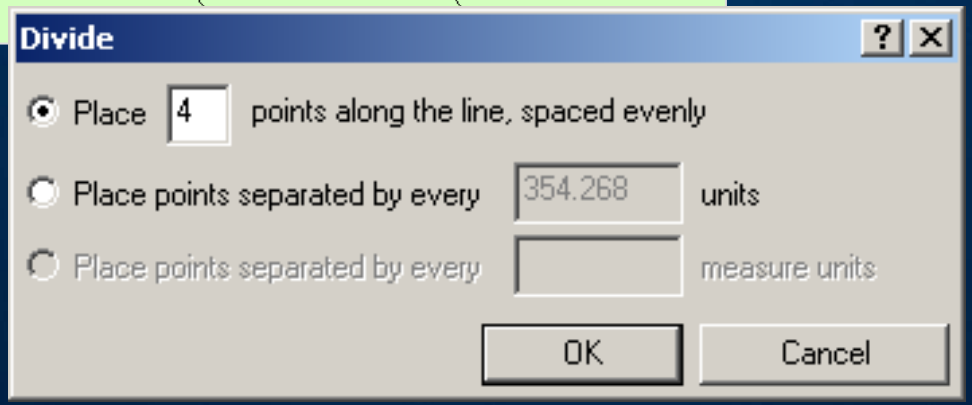


Divide

- Creates features at a given interval along a line
  - Can specify number or distance

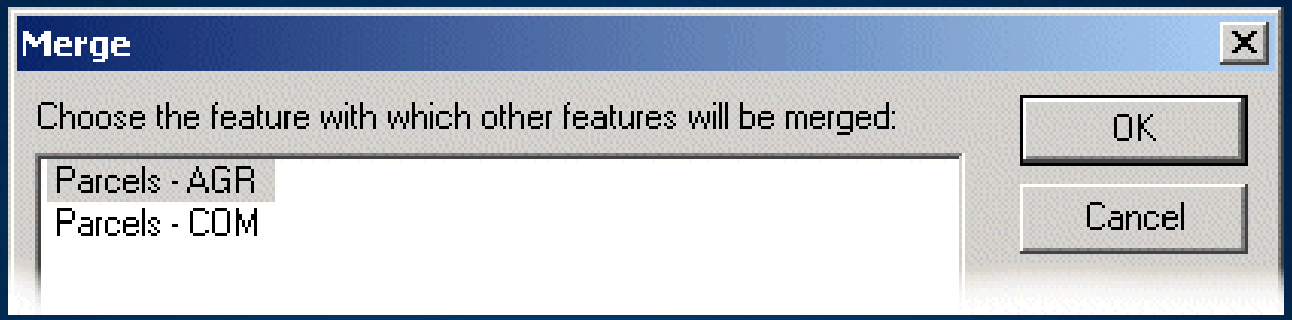


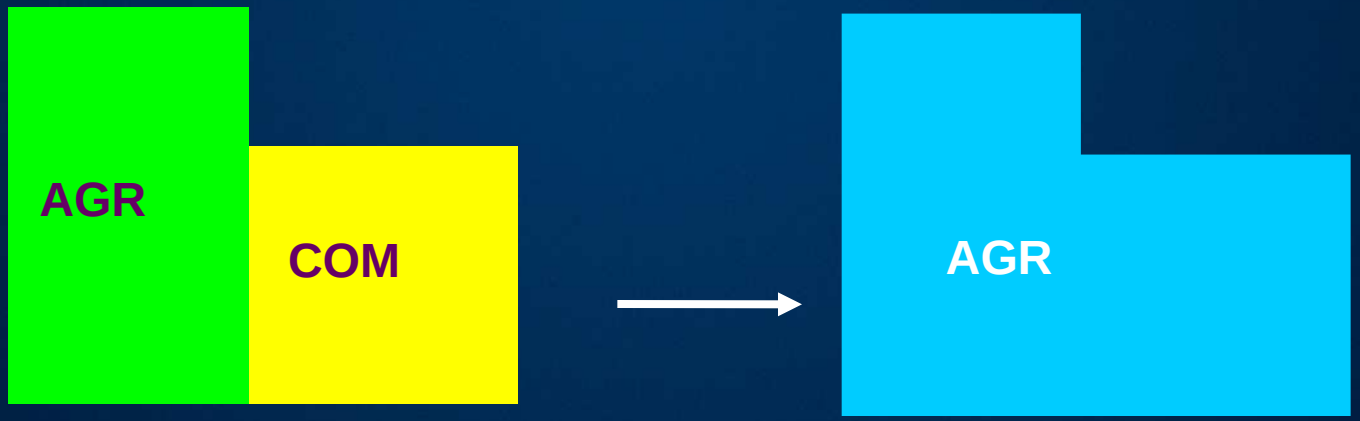
- **Specify line feature class**
- **Select target line feature**
- **Divide command**
  - ***Place 4 points along line***
  - **Click OK**



Combining Features

- Merge
  - Combine features in the same layer
  - Modifies original feature

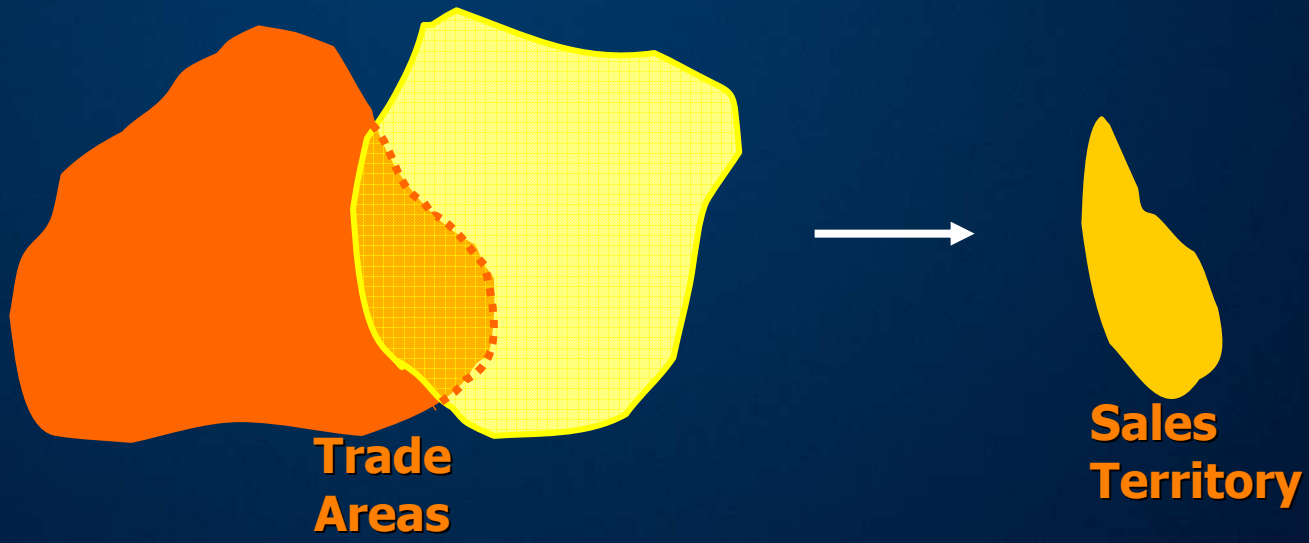




Union and Intersect

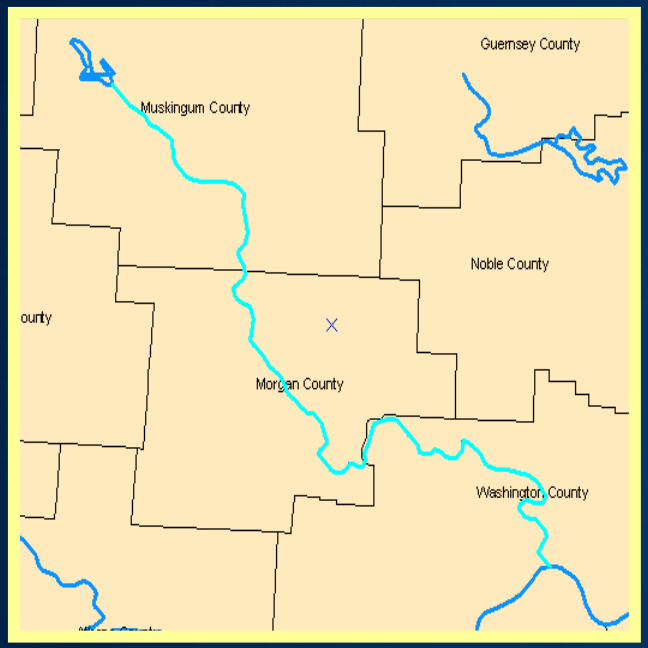
- Create features in a target layer
- Does not delete original features
  - Union

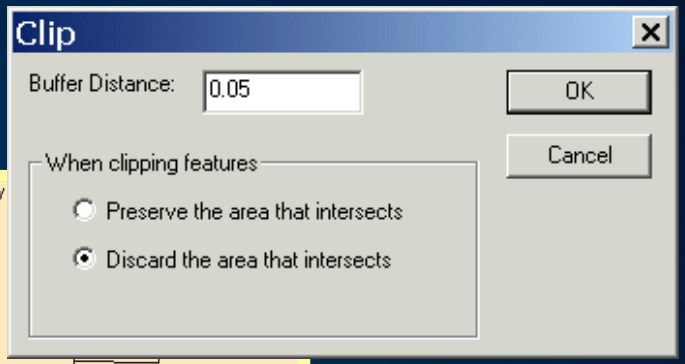
  - Intersect



Clip

- Uses buffer distance
- Preserve or discard clipped region

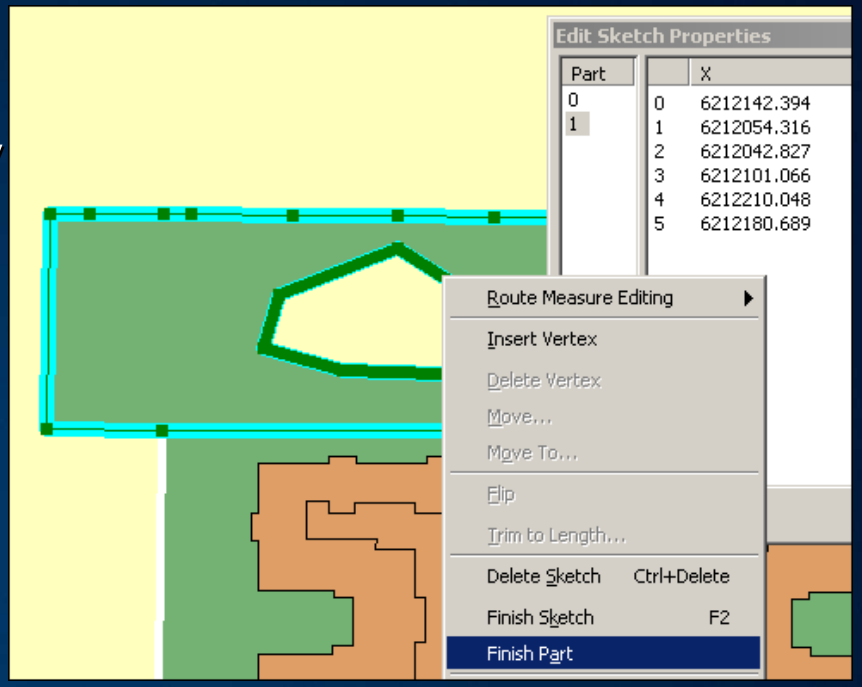


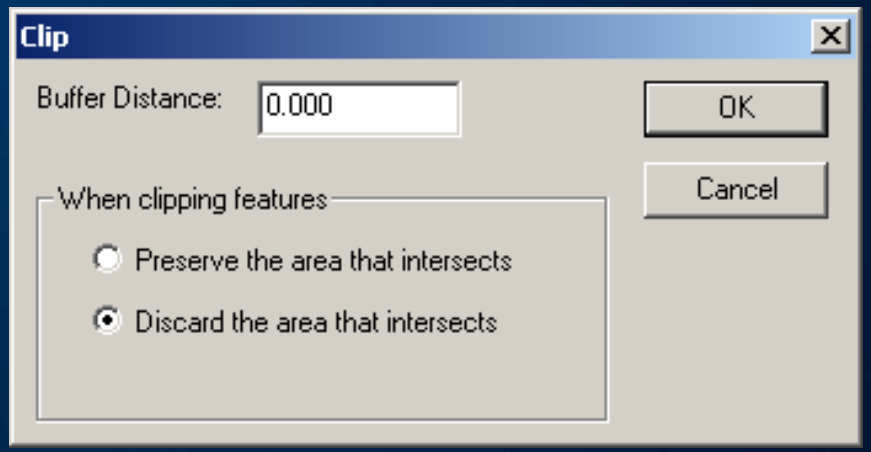


- Clip Edit tool vs. GP Clip tool

Creating & filling donut holes in polygons

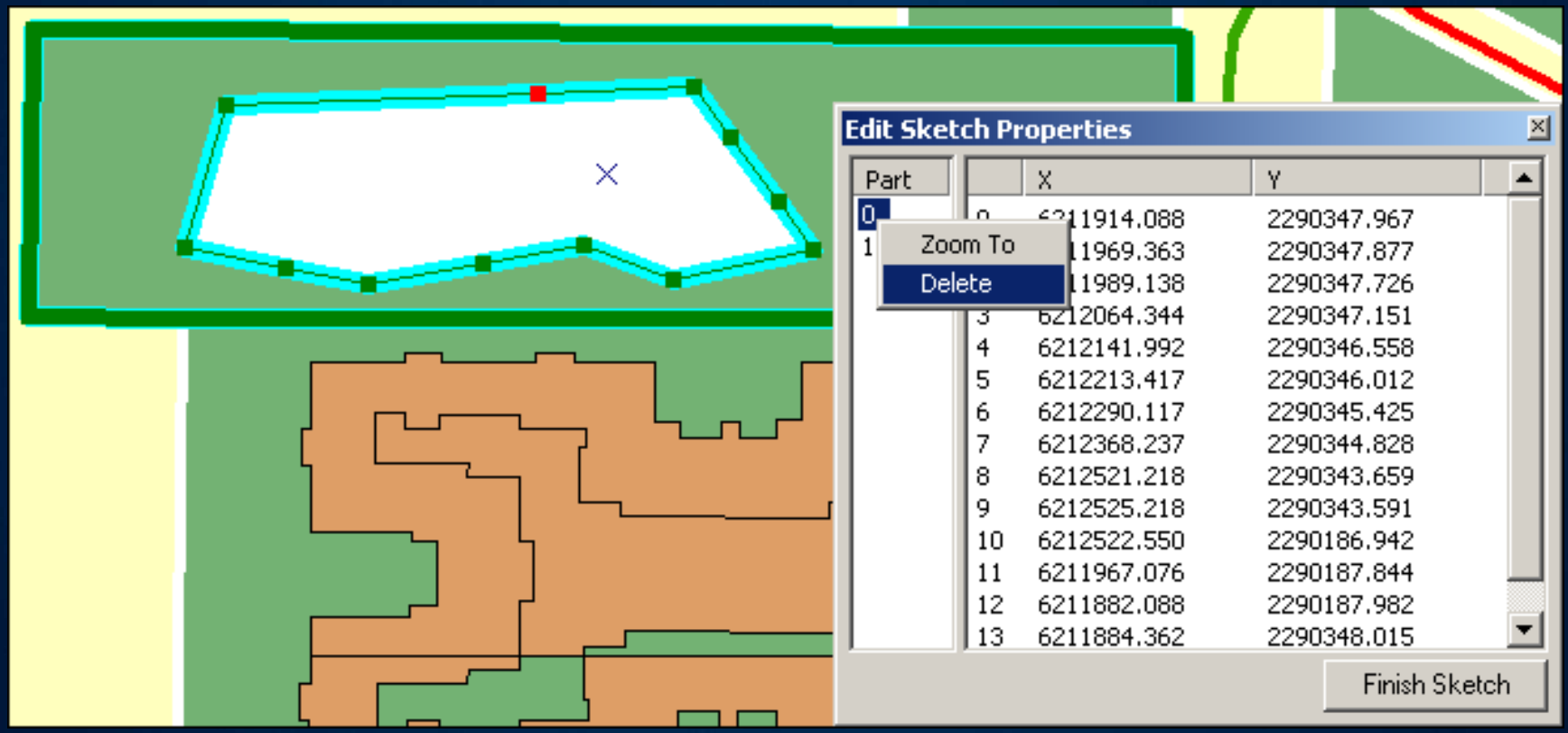
- Creating a Donut hole:
  - Double click on the feature to modify shape
  - Click on the Sketch tool
  - Right click to ‘Finish Part’
  - Sketch the hole feature
- OR
  - Add a feature where you want the hole
  - Select that “Holed” feature
  - Choose Editor menu -> Clip
  - Choose ‘Discard the area that intersects’ option





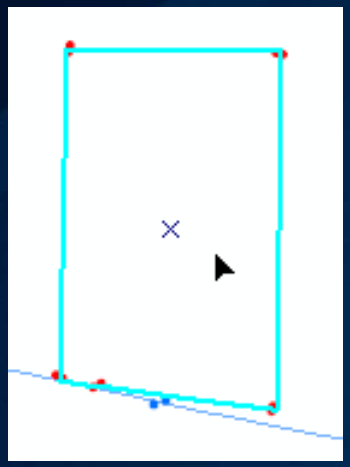
Removing donut holes in polygons

- Removing a Donut hole:
  - Double click on the feature to modify it's shape
  - Open the Sketch Properties
  - Right click on "Donut Hole" part and choose 'Delete'

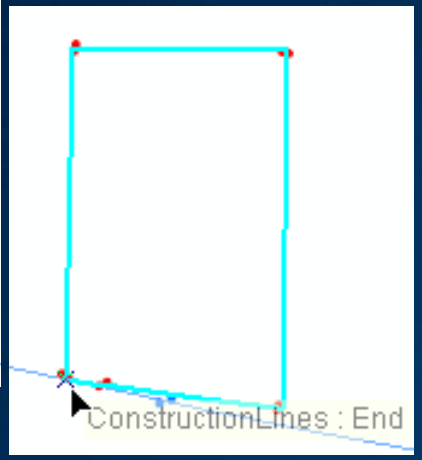


Adjustments

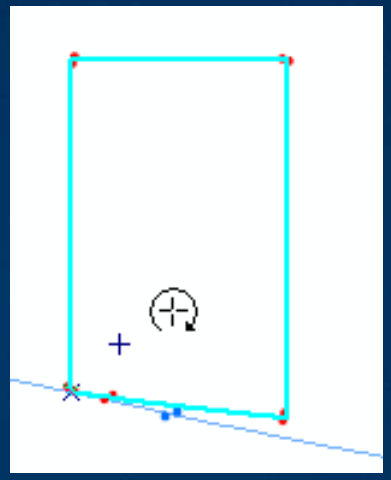
- Rotating



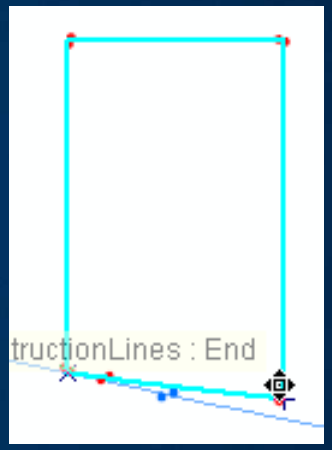
1. Select lines



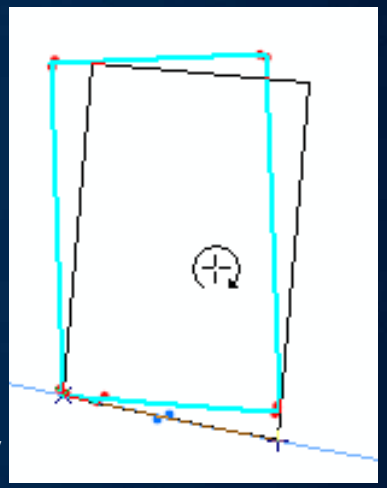
2. Move anchor
To rotation point



3. Activate rotate tool and expose secondary anchor (use the ‘s’ key)



4. Snap secondary Anchor to snap point

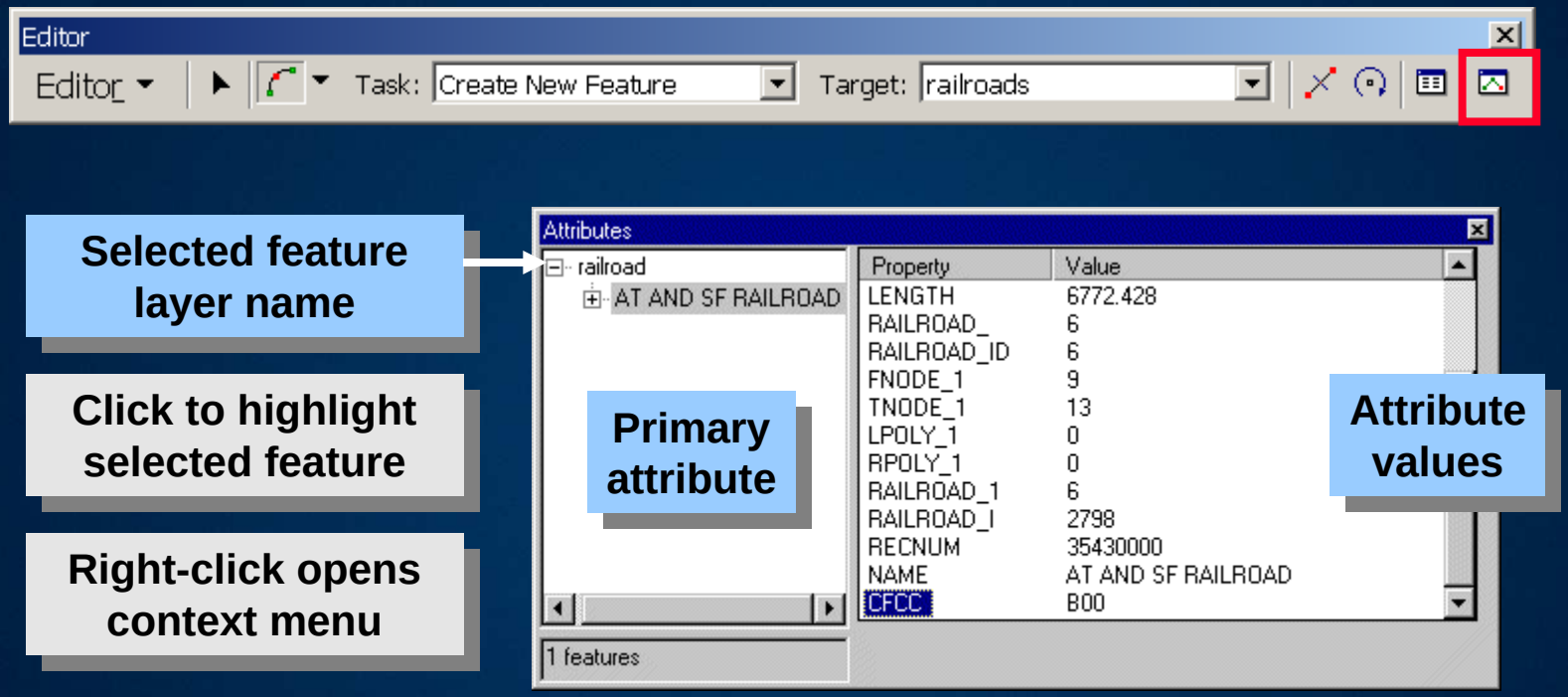


5. Rotate to snap

- Can be further modified using Zipper Task
  - To ensure topological integrity

Editing attribute data for selected features

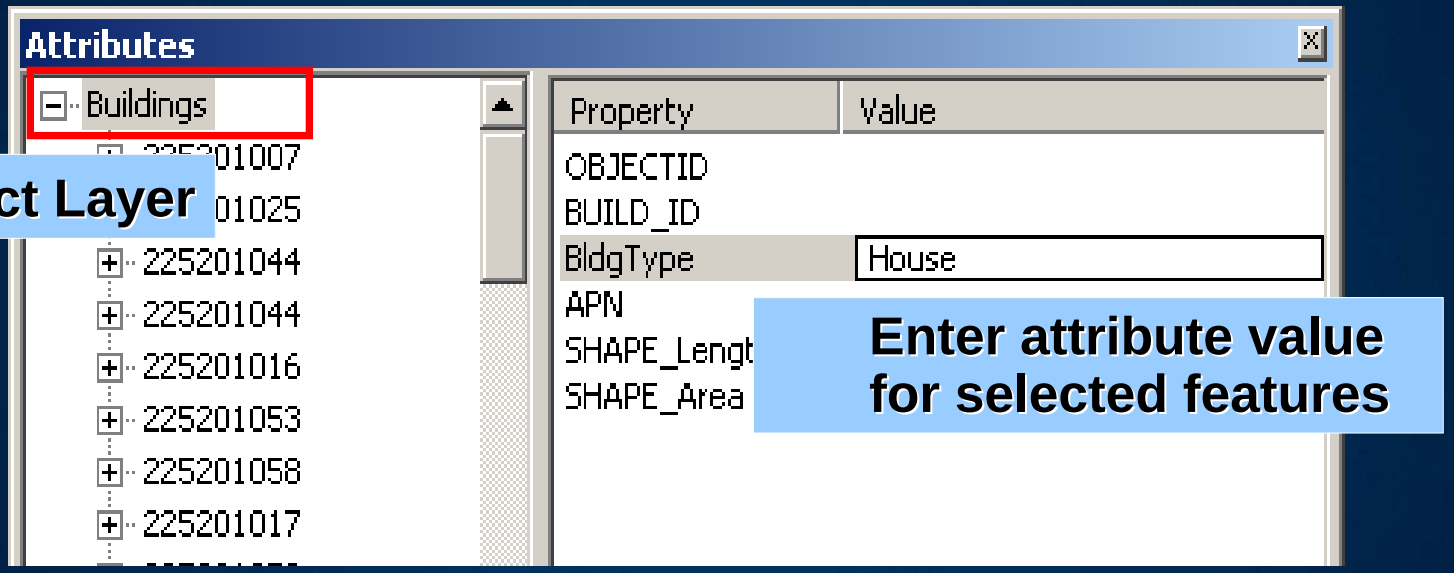
- Attribute dialog allows viewing and editing of selected feature attributes



- Add or copy/cut and paste values for single or multiple selected features

Updating the attributes of multiple features?

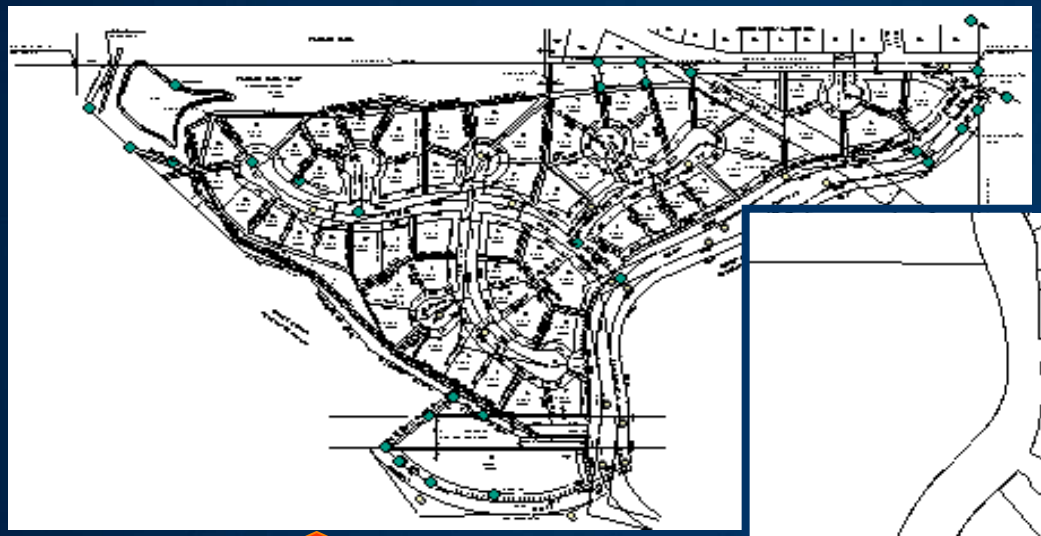
- Batch update of feature attributes



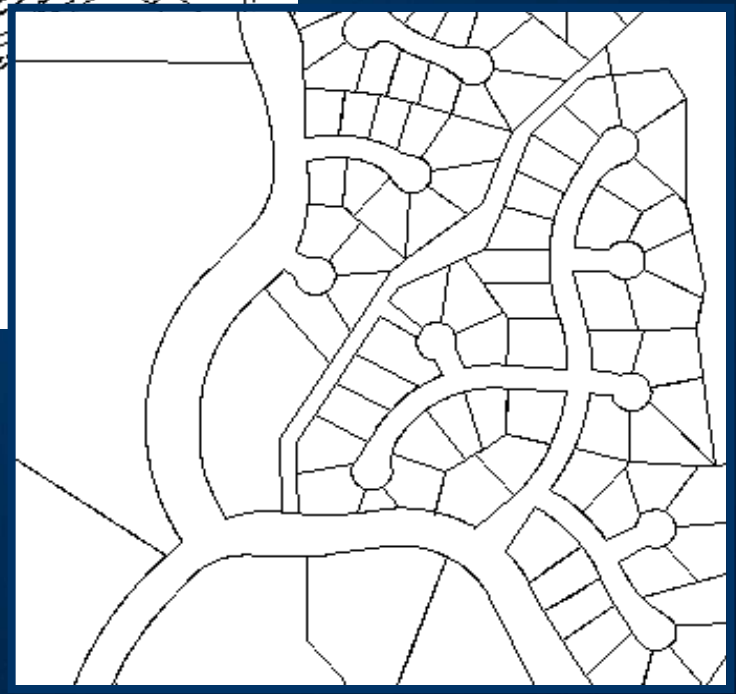
Solving Feature Adjustment Problems

Feature adjustment challenge #1

- How can you quickly take a feature that resides in a non-editable layer and reproduce it in an editable layer?



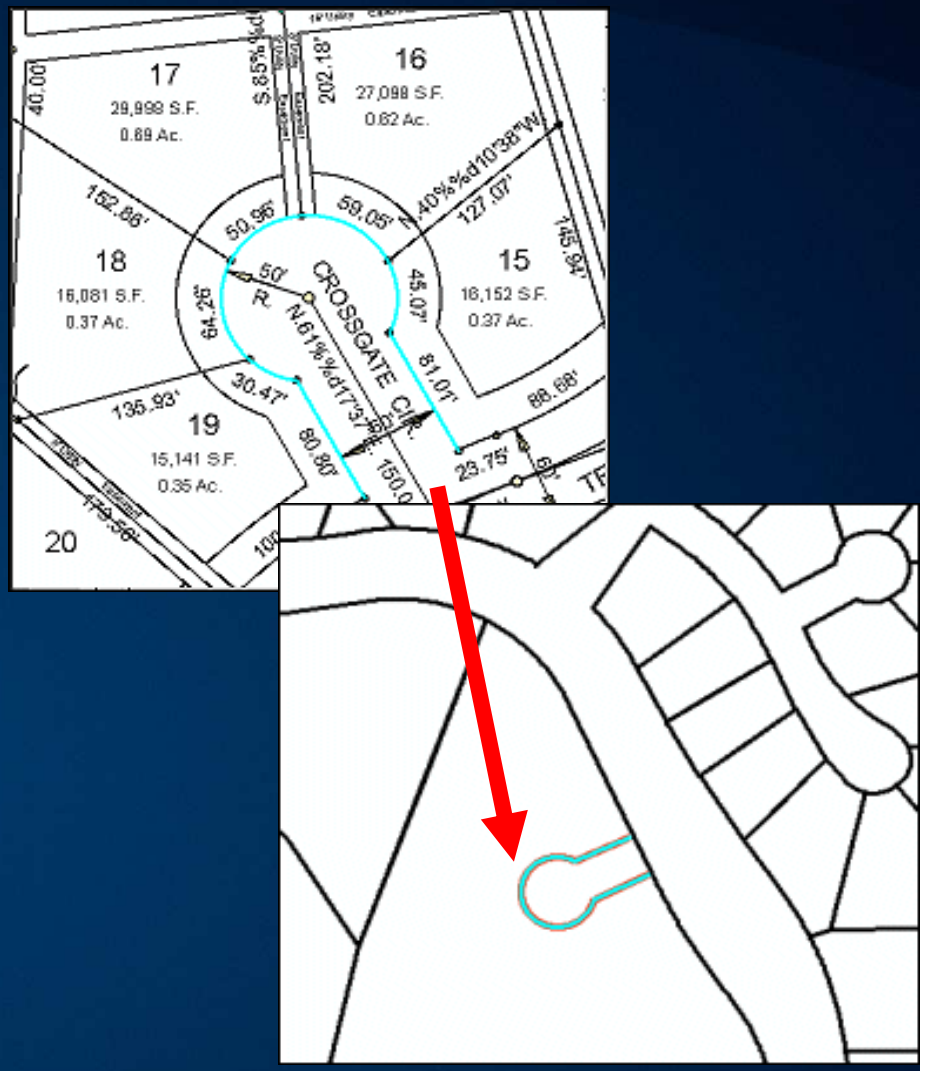
CAD drawing



Lot lines layer

Copy Features Tool

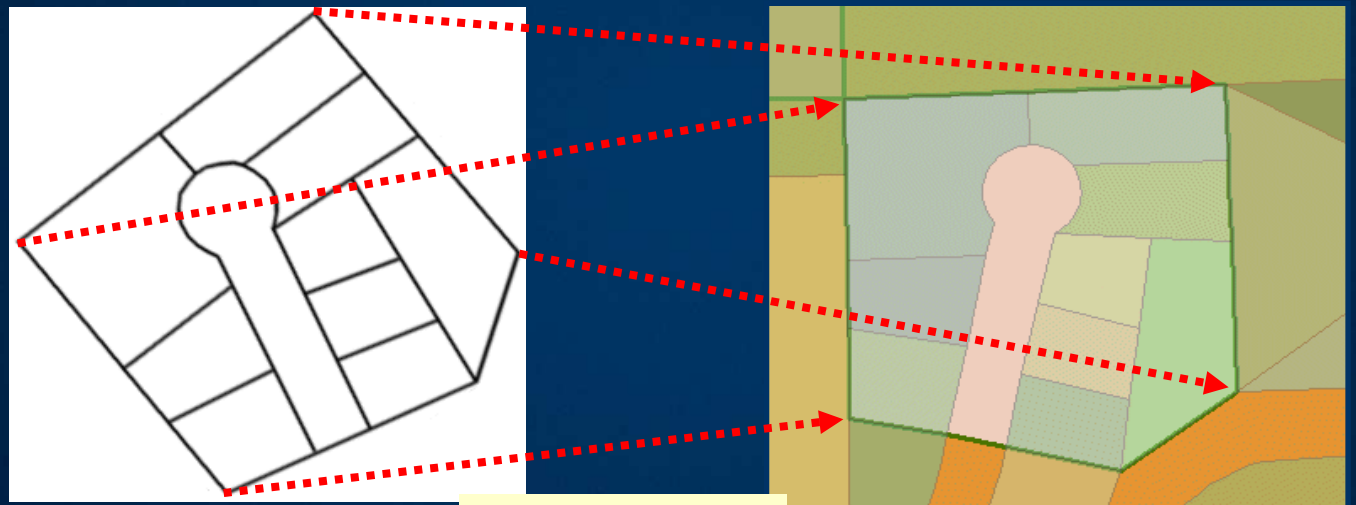
- Copy data outside of target layer spatial domain and paste inside
- Copies both editable and non-editable data
- Scales selected features



The target layer must be the same type of layer (point, line, or polygon) as the one from which you copied. There is one exception to this rule—you can copy polygons into a line layer.

Feature adjustment challenge #2

- How do I get the Adjust command enabled and what adjustment technique should I use?



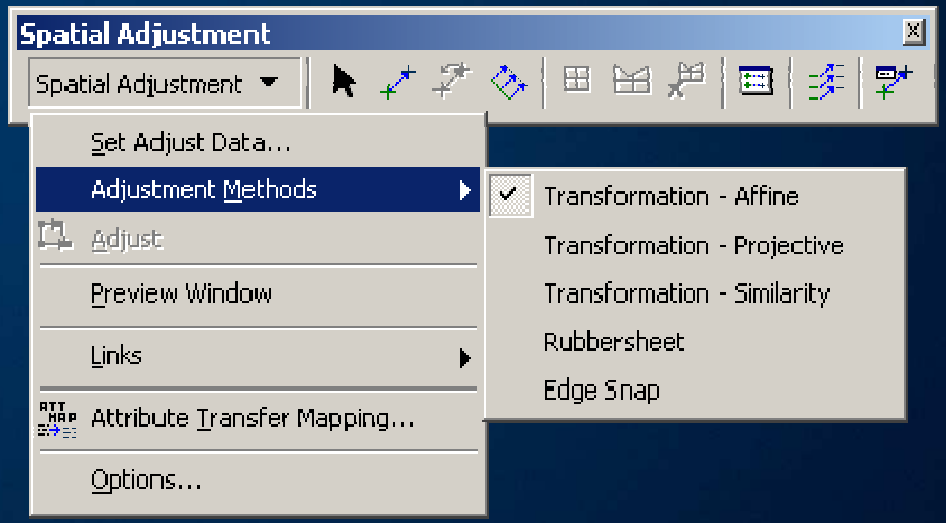
Spatial Adjustment

- Located on Spatial Adjustment toolbar
- Commands & Tools to modify coordinate locations of your vector data
- Provides a way for you to transfer the attributes from one feature to another

Adjustment methods used to:

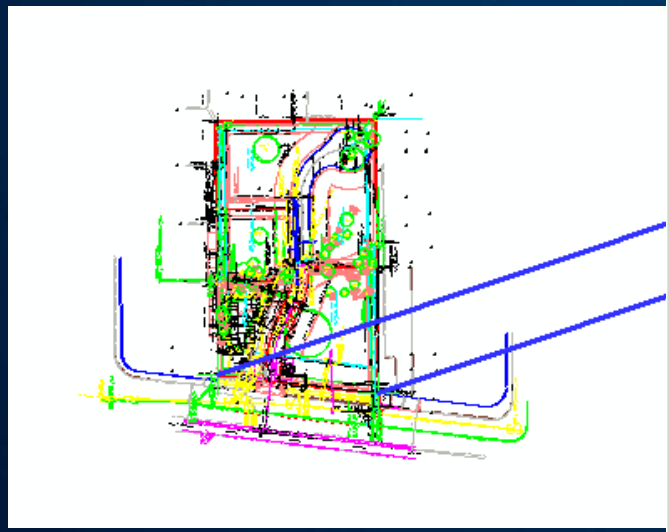
- Differentially scale, skew, rotate and translate data
- Stretch or warp features
- Moves end vertices of features in layer to the ends of adjacent layer

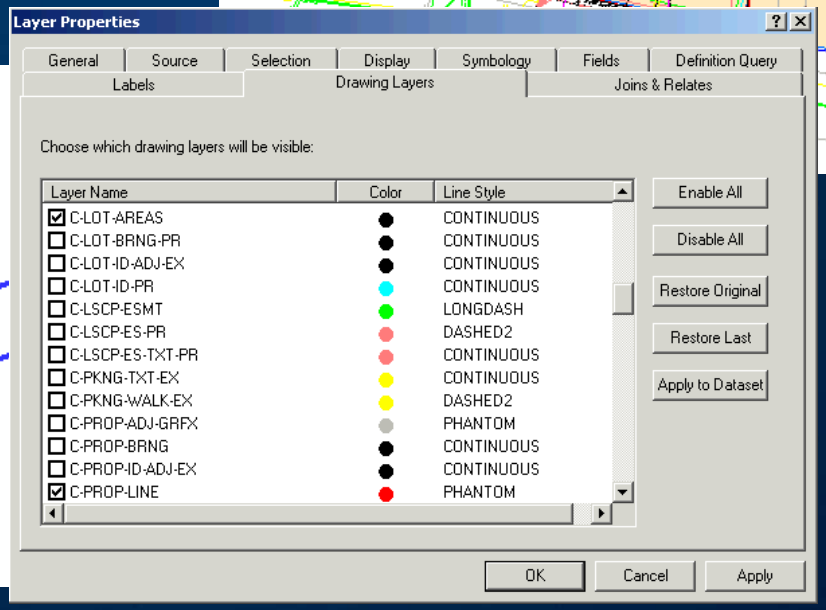
Remember to create the correct number of links for the transformation method



Georeference a CAD file

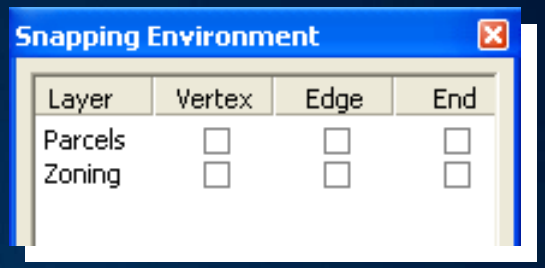
- Direct read CAD data as formatted drawing or features
- Snapping to CAD and features
- Select specific layers to display, then copy and paste into layer



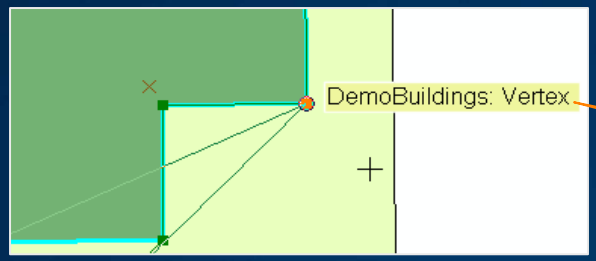


ArcMap Snapping Environment

- Prioritize snap order
  - Reorder layers in snap dialog (top = highest)



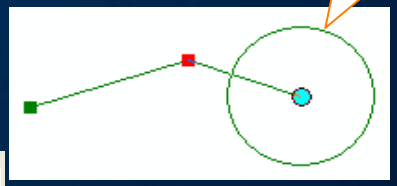
- Snap tips



Snap tip

- Tips:
  - Press the ‘Spacebar’ to temporarily suspend snapping
  - ‘V’ shortcut key to locate vertices
  - ‘T’ key to view the Snapping Tolerance

Snapping tolerance

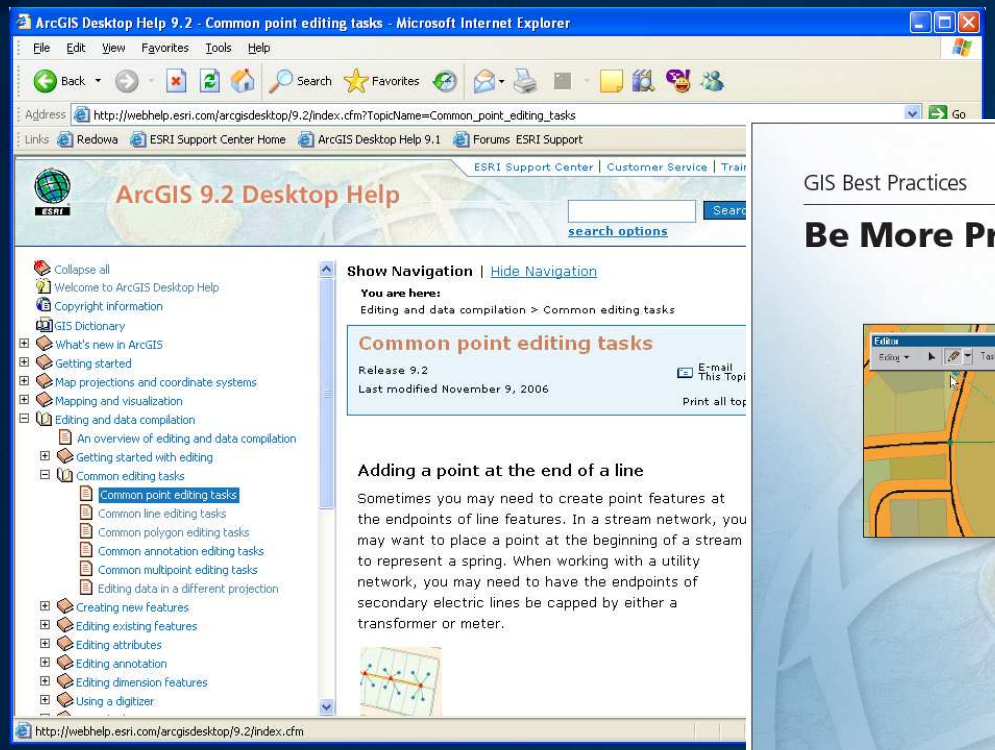


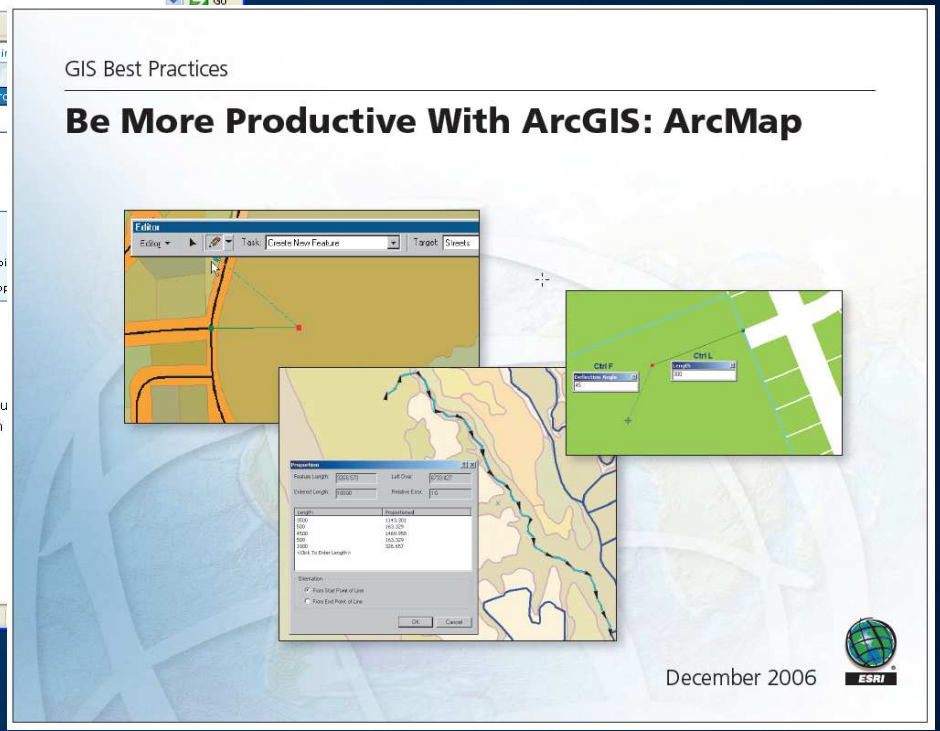
Why can’t I start Editing?

- Permissions
- Folder or workspace is set to read–only
- Lock files
- Licensing
  - ArcView cannot edit topology, feature–linked annotation, etc.
- Field Calculator is not enabled (grayed out)
  - Feature classes that participate in topology or network cannot be updated outside of an edit session

Workflows & Common Tasks

- ArcGIS 9.2 Desktop Help



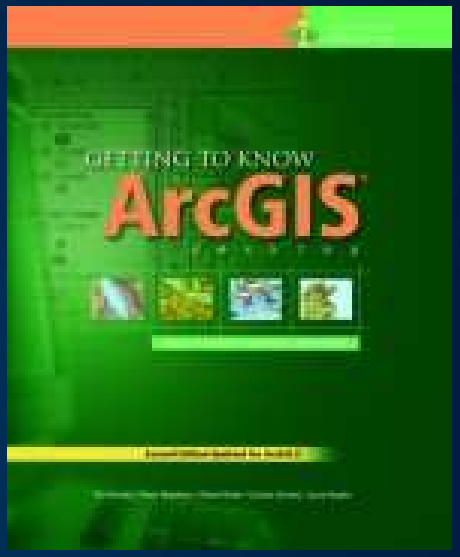


- *New* Whitepaper:

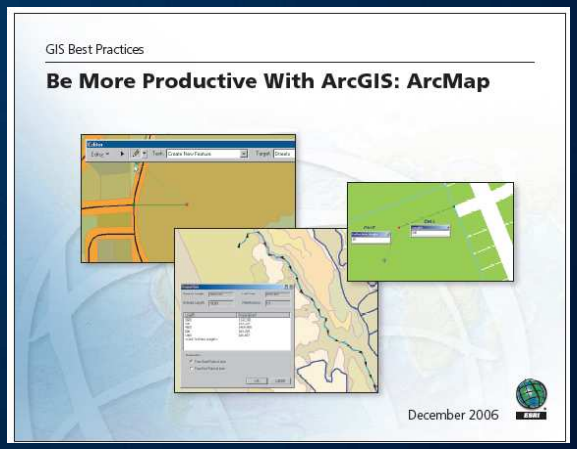
  'Be More Productive with ArcGIS Desktop'

Additional Reading

- *Getting to Know ArcGIS Desktop, Second Edition*
  - Basics of ArcView, ArcEditor, and ArcInfo, Now includes ArcGIS 9.2 trial software on DVD



- *Whitepaper – Be More Productive With ArcGIS: ArcMap*
  - Focuses on Editing



Training Resources

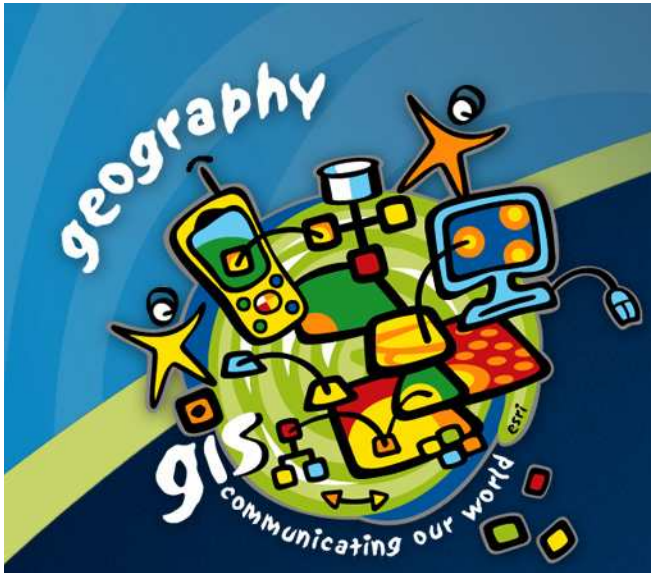
Instructor-Led Training

- Data Production and Editing Techniques
  - Learn techniques for data preparation, conversion, and editing
- Creating and Editing Parcels with ArcGIS
  - Displaying, symbolizing, and editing parcel data as well as entering subdivisions into existing parcels
- QA\QC for GIS Data
  - Covers errors and quality in GIS data and provides practical guidelines for creating a complete QA plan

More Training Resources

Virtual Campus

- Editing in ArcGIS 9: Tips and Tricks
- Editing in ArcGIS 9: Tips and Tricks II
- Creating and Editing Geodatabase Topology with ArcGIS 9
- What’s New in ArcGIS Desktop at 9.2



Questions?